OL. 85 NO. 2

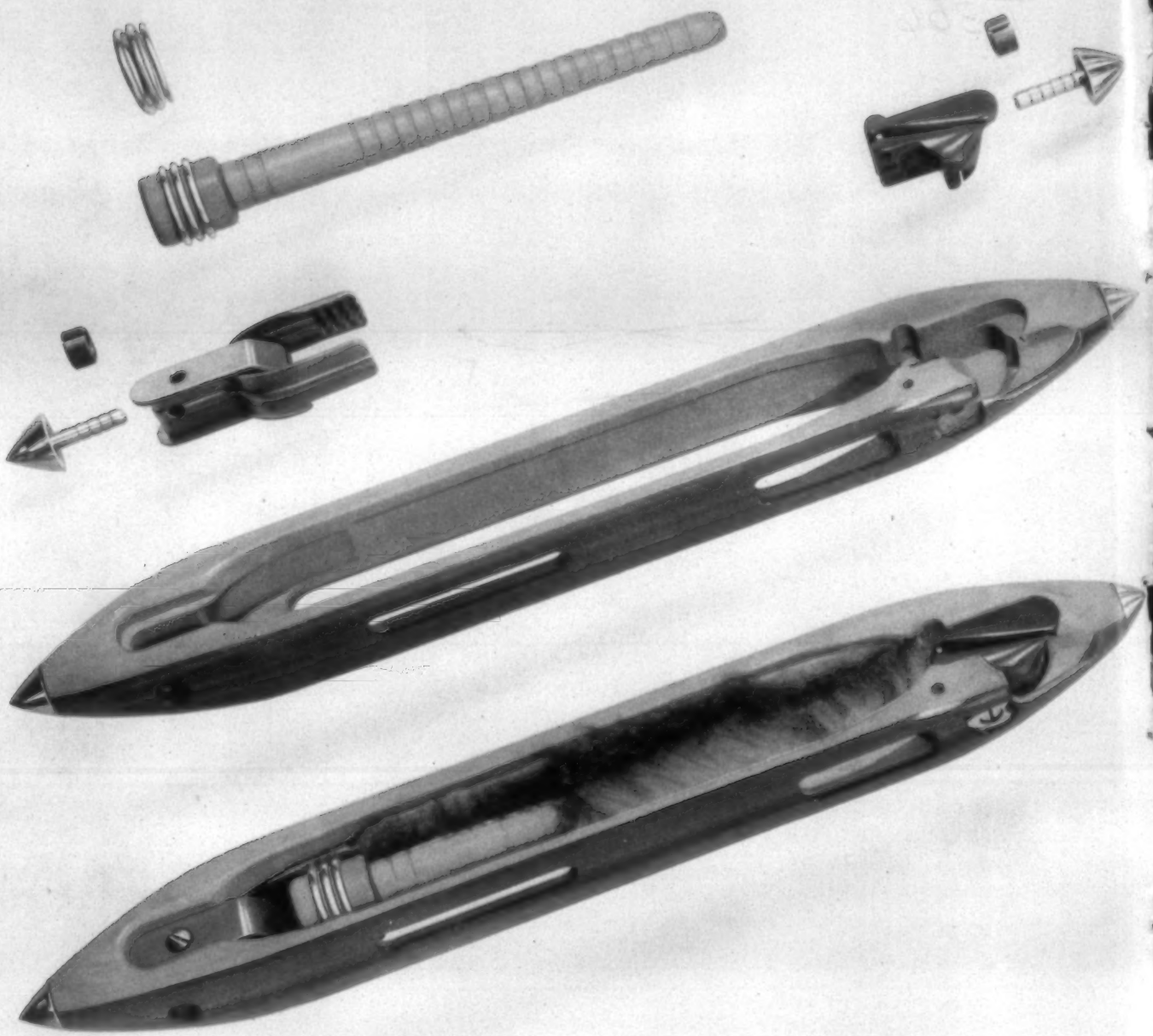
It's More Important To Own A Market Than A Mill
(Page 33)

textile bulletin

FEBRUARY • 1959

Sectional INDEX

...TILE BULLETIN is published ...rterly by Clark Publishing ..., 218 West Morehead St., ...lotte 6, N. C. Subscription ...$3 per year in advance, $2 ... two years. Entered as ...ond-class mail matter ...er 2, 1911, at Postoffice, ...lotte, N. C., under Act ... Congress, March 2, 1897.



PLANNED QUALITY! Quality doesn't just happen at Draper . . . it is the result of careful planning and engineering. Each part, regardless of size, shape, or material, is designed to do a specific job in the best possible manner. New parts, *as illustrated above*, are constantly being developed to increase your mill efficiency and profits. *See your Draper representative today* for cost-saving parts and mechanisms.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.

THE NEED: A carrier to improve stretch nylon processing

Stain was a problem in processing stretch nylon. The industry also needed positive means for yarn identification—and a collapsible carrier that would allow the yarn to relax uniformly throughout the entire package.

Extensive Sonoco research on these problems resulted in many new carrier tubes. Critical dimensional specifications were met and stainproof surfaces provided. These stretch nylon tubes were produced, as they are today, in an adequate variety for yarn identification. Lacquer tips, scores and notches are also available. And, because the strength of the tubes is rigidly controlled in manufacture, they collapse properly and aid considerably in the production of uniform finished yarn. Their use eliminates the need for more expensive methods in processing stretch nylon.

Only Sonoco, with its modern laboratory, engineering and production facilities, could solve these problems with an economical and efficient carrier. It is typical of countless cases where Sonoco leadership in the development of textile paper carriers, based on 60 years' experience, has benefited the industry. Let Sonoco help you!

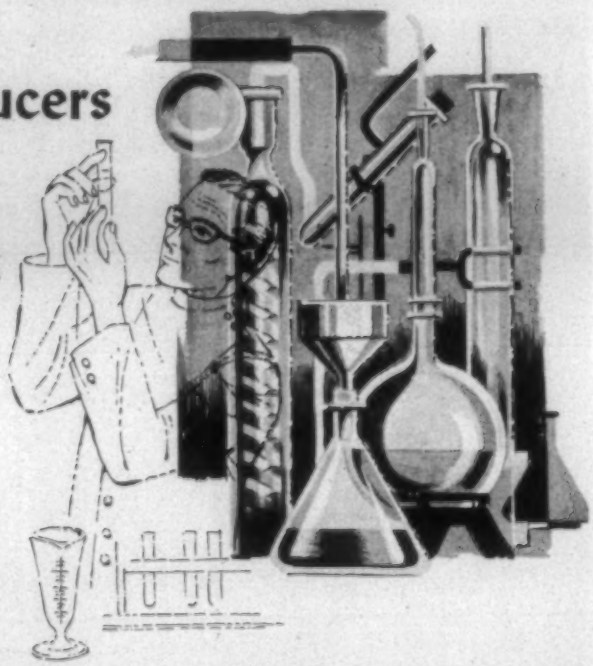
SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office—Hartsville, S. C. Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.

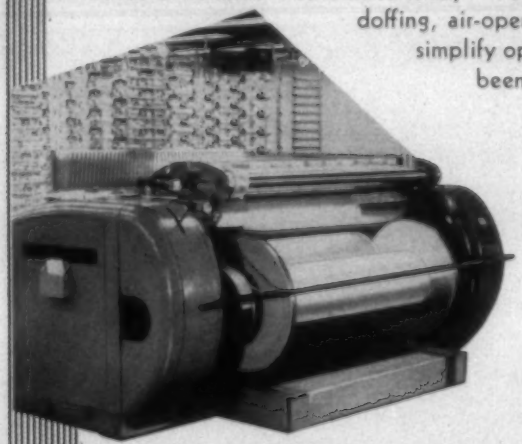
15 of the World's Leading Man Made Yarn Producers use COCKER Warping Equipment *Exclusively*



[To be completely accurate: These mills have installed a total of 8 competitive warpers for comparative purposes . . . against a total of 205 Cocker Warpers.]

Since 1950 Cocker has installed about three times as many warpers as the next leading make. Today most of the world's leading producers of man made fibers now use Cocker Warping Equipment Exclusively.

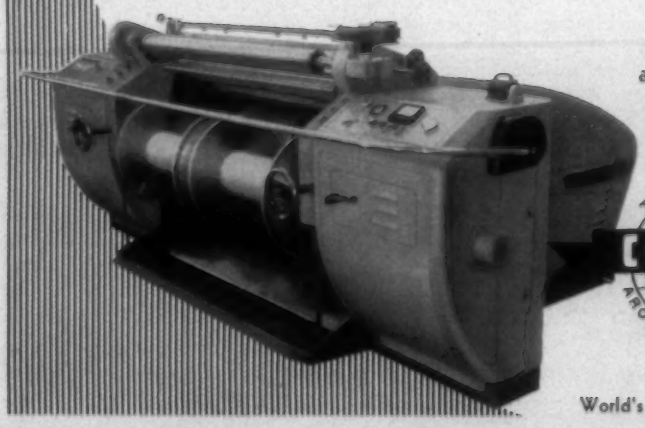
• **For Production.** Rugged construction and accurate controls permit maximum sustained speeds • **For Versatility.** Cocker Warpers are engineered with an eye to the future, with advanced features to meet the needs of tomorrow as well as today • **For Convenience.** Sensitive and accurate controls, indicators, air doffing, air-operated presser rolls, powerful brakes, and many other features greatly simplify operation • **For Economy.** For over 50 years Cocker equipment has been famous for its sound engineering, long service and low operating costs.



Whatever your warping requirements may be, there is a Cocker Machine which will do the job faster and better. Here are two examples:

The Cocker Model SD-49 Warper (left)

Designed especially for synthetics but will handle any type yarn. Produces unexcelled synthetic warps from finest deniers to heaviest tire cord yarns. Takes section beams with flanges up to 40" diameter. Produces warps of any desired density at speeds up to 1000 yds. per minute. Driven and braked from both ends.



The Cocker Multiple Beam Tricot Warper Model MB55-32 (below)

Will handle 2-21" beams, 1-42" beam, 1-50" or 1-55" Raschel Beam with simple changeover from one set-up to another. Individual controls are in full view and easy reach. Has all modern features and safety devices. Normal sustained speeds up to 600 yds. per minute.

Write for full information today.

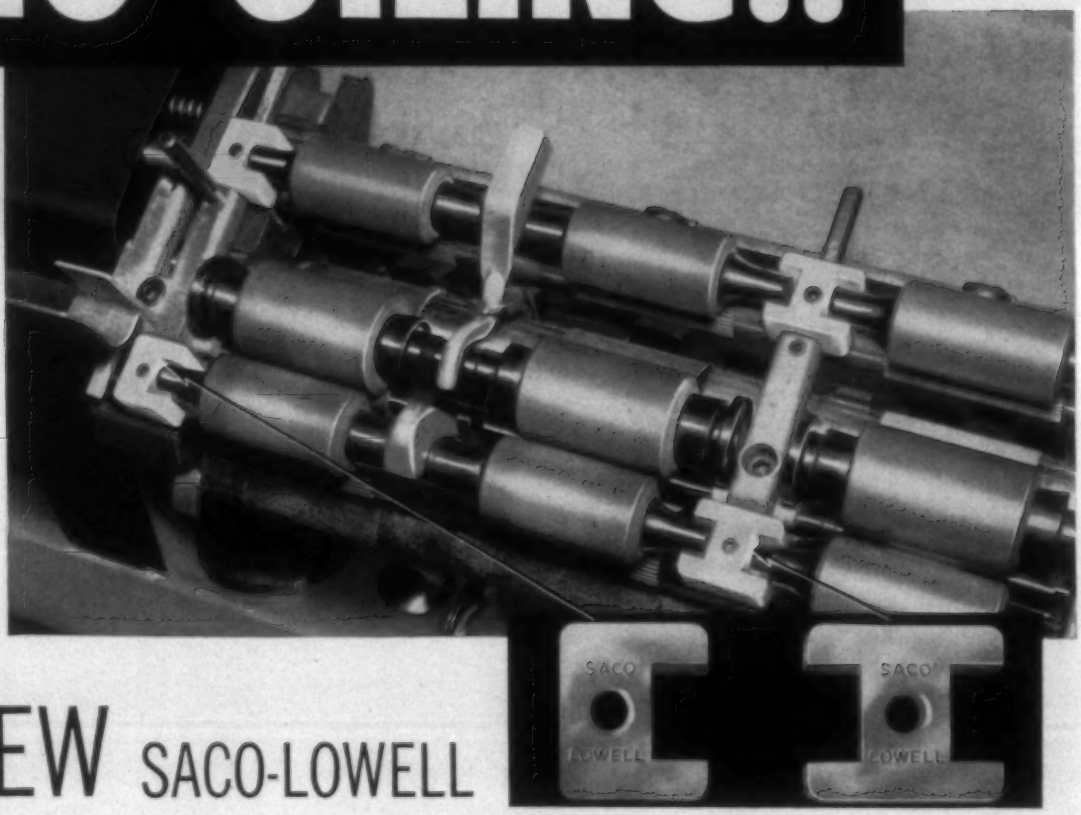
In Canada:
Contact W. S. Clark
Montreal, Canada
Melrose 1-3571

THE LEADER COCKER AROUND THE WORLD

MACHINE & FOUNDRY CO.

Plant and Offices: Ranlo, N. C. Mailing Address: Gastonia, N. C.
World's Largest Designers and Builders of Complete Warp Preparatory Equipment

NO OILING!!



NEW SACO-LOWELL NYLON CAP BAR TIPS

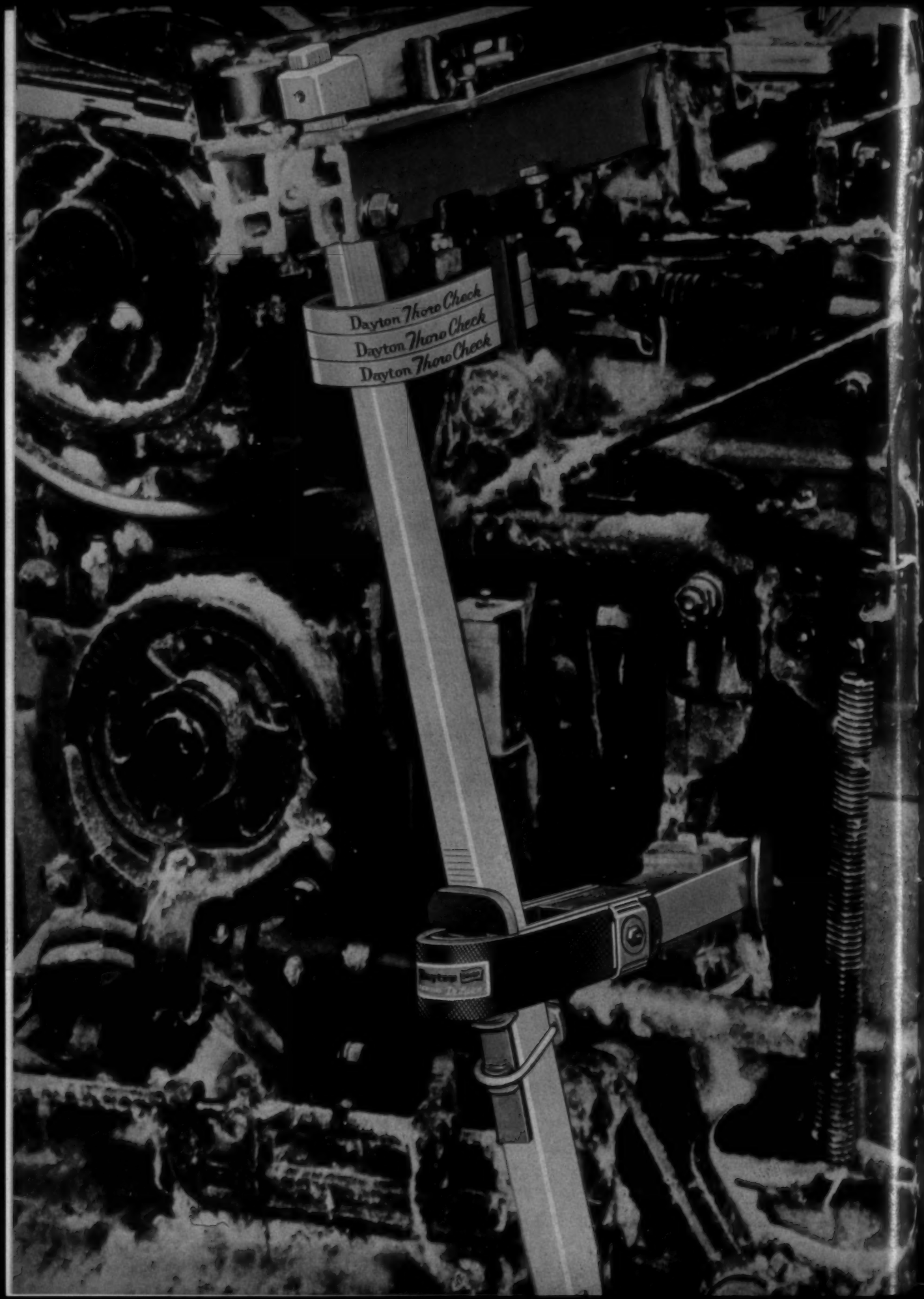
Eliminate oiling
Last much longer
Improve running conditions
Are inexpensive

New Nylon Cap Bar Tips are a low cost way to reduce cap bar wear and eliminate oiling, a source of yarn soilage. Easy to clean — just apply these inexpensive tips to existing frames in place of standard cast tips. No frame changes required.

ANOTHER NEW IMPROVED SACO LOWELL REPLACEMENT PART. Buy a trial order and evaluate these Nylon Cap Bar Tips in your mill — they cut cap bar wear and sharply reduce replacement expense.

THE STANDARD OF QUALITY AND PERFORMANCE Since 1813

SACO-LOWELL REPLACEMENT PARTS DIVISION
SACO-LOWELL SHOPS
Executive and Sales Offices — GREENVILLE, S.C.
District Sales Offices — ATLANTA, GA., CHARLOTTE AND GREENSBORO, N.C.

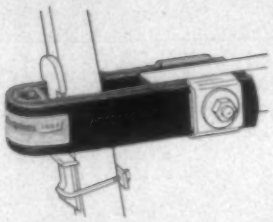

Dayton Thoro Check
Dayton Thoro Check
Dayton Thoro Check

To Eliminate Downtime

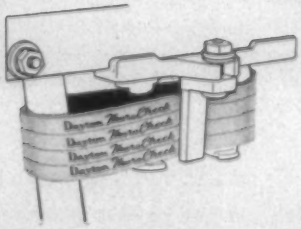
Guard These Three Points with the Shock and Wear Resisting Dayton Combination

GET RIGHT TO THE SOURCE and you'll eliminate unnecessary downtime that runs up expense and hampers your production. There are three points to watch . . . because they take most of the punishing wear and shock . . . the loop picker, the check straps and the lug strap.

That's why Dayton has concentrated on perfecting a balanced combination to protect all three points of shock and wear. And, it takes all three to absorb the shock of high speed shuttles, smoothly check the picker stick, and accurately deliver the shuttle return. Try the Dayton combination.

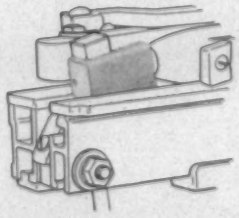


SHOCK ABSORBING Dayton Thorobred Deluxe-Lug Straps are molded together around a built-in plug that soaks up the hammering blows generated in the first instant of picker stick thrust. One-piece, link-free construction is the secret of longer service with greater protection for both the stick and loom.



GRADUATED CHECKING ACTION of Dayton Endless ThoroCheck Straps . . . plus a stronger multi-ply construction . . . adds 6 to 8 months more of trouble-free service. With multi-straps to do the checking, there's never any drag over the face of the stick and no interference with the shuttle throw.

WEAR RESISTANT Dayton Thorobred Loop Pickers last for millions of contacts. Here are the three reasons why! The tilt of the picker face is perfect for strainfree shuttle contact . . . tapered picker stick hole and tapered bottom insure accurate seating and protect against tearing the loop ply . . . corners are round and smooth to prevent jerked-in fillings.



Start saving today by refitting your looms with the Dayton combination. Then compare the long life, freedom from downtime and, above all, the smoother picking action that only Dayco products can give you. Order through your mill supply jobber or write The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Building, Greenville, S. C.

D.R. 1959

Dayton Rubber

Dayco and Thorobred Textile Products For Better Spinning and Weaving

OVERSEAS PLANT: THE DAYTON RUBBER CO., LTD., DUNDEE, SCOTLAND

For clearer size, truer colors

. . . in warp sizing and in finishing, use TEN-O-FILM starches.

In warp sizing, TEN-O-FILM starches cook completely in thirty minutes and remain stable through prolonged heating and circulating. Sizing and desizing of all types and blends of yarns may be done at lower temperatures to reduce "bleeding," and permit use of a great variety of dyes.

In finishing, the clarity of film produced by TEN-O-FILM is a real advantage. There is no masking of colors in dyeing man-made fibers.

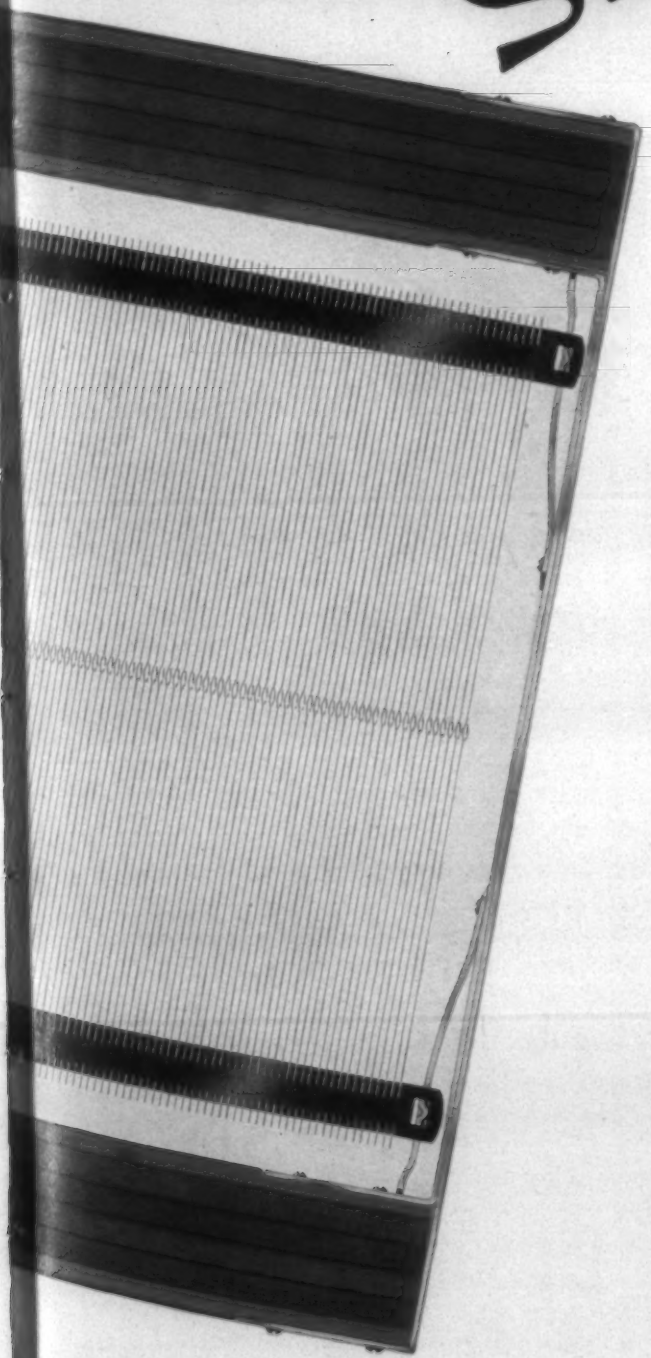
Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

Fine products for the Textile Industry: EAGLE® • FOXHEAD® CLARO® • GLOBE® and TEN-O-FILM® starches • GLOBE® and EXCELLO® Dextrines.

CORN PRODUCTS SALES COMPANY
17 BATTERY PLACE, NEW YORK 4, N.Y.

ANOTHER Stehedco FIRST!



Increased STRENGTH With the NEW DURAWELD HARNESS FRAME

Here is a PREMIUM GRADE harness frame that GUARANTEES LONGER LIFE.

Each frame stick is a lamination of strips of carefully selected high quality wood permanently bonded together for greatest strength.

Here are a few of the many advantages:

1. **Greatest stability with less distortion during its entire long life;**
2. **Elimination of excessive wear on heddles or adjacent frames because there is no warping;**
3. **Greater holding power for hardware;**
4. **Practically no splintering due to careful selection of wood used for edges;**
5. **Elimination of weak spots by careful selection and blending of wood used in lamination.**

YOU OWE IT TO YOURSELF TO TRY THE NEW STEHEDCO HARNESS FRAMES

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N. C. • Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

For clearer size, truer colors

. . . in warp sizing and in finishing, use TEN-O-FILM starches.

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Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

Fine products for the Textile Industry: EAGLE® • FOXHEAD® CLARO® • GLOBE® and TEN-O-FILM® starches • GLOBE® and EXCELLO® Dextrines.

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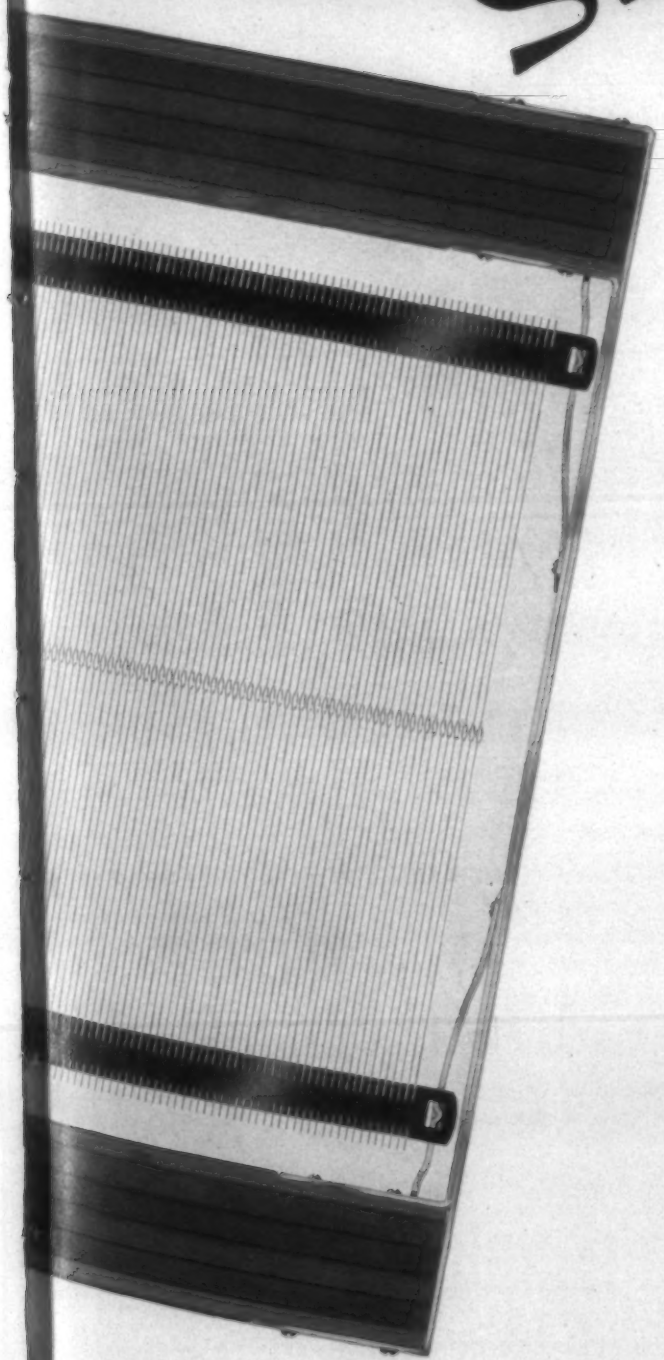

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Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N. C. • Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

New

Polynycel A&B offers

4 NEVER-BEFORE MAJOR BENEFITS

- **Gives Maximum Dye Transfer at the Boil**
- **Acts as a True Leveling Agent — Prevents Streaking**
- **Ends Foam Troubles**
- **Halts Excess Waste**

New, valuable Polynycel A and B offers you—for the first time—a multitude of profitable benefits every time you stock dye Nylon 6, 66, or other polyamides of delicate pastel shades. First, you are assured of maximum dye transfer at the boil, with excellent bath exhaustion with selected acid dyes! In addition, package dyeing and other methods handle easier than ever! Foaming? There is none! And as for untoward effects on light fastness — they don't exist! They're perfect, too, for skein dyeing of soft twist, hard twist, and lofted yarns of wool. So whatever your needs, contact Jacques Wolf.

PLUS — FREE PERSONALIZED TECHNICAL SERVICE
When you use Polynycel, a Jacques Wolf chemist is made available to work with you at your plant. This individualized service enables you to get the maximum advantages of our new product in your operation at no charge to your company!

WRITE TODAY FOR COMPLETE INFORMATION AND SAMPLES

JACQUES WOLF & CO.
Chemicals PASSAIC, N.J.
Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

For mills with a future!...the frame of the future

the New WHITIN

PIEDMONT

SPINNING FRAME

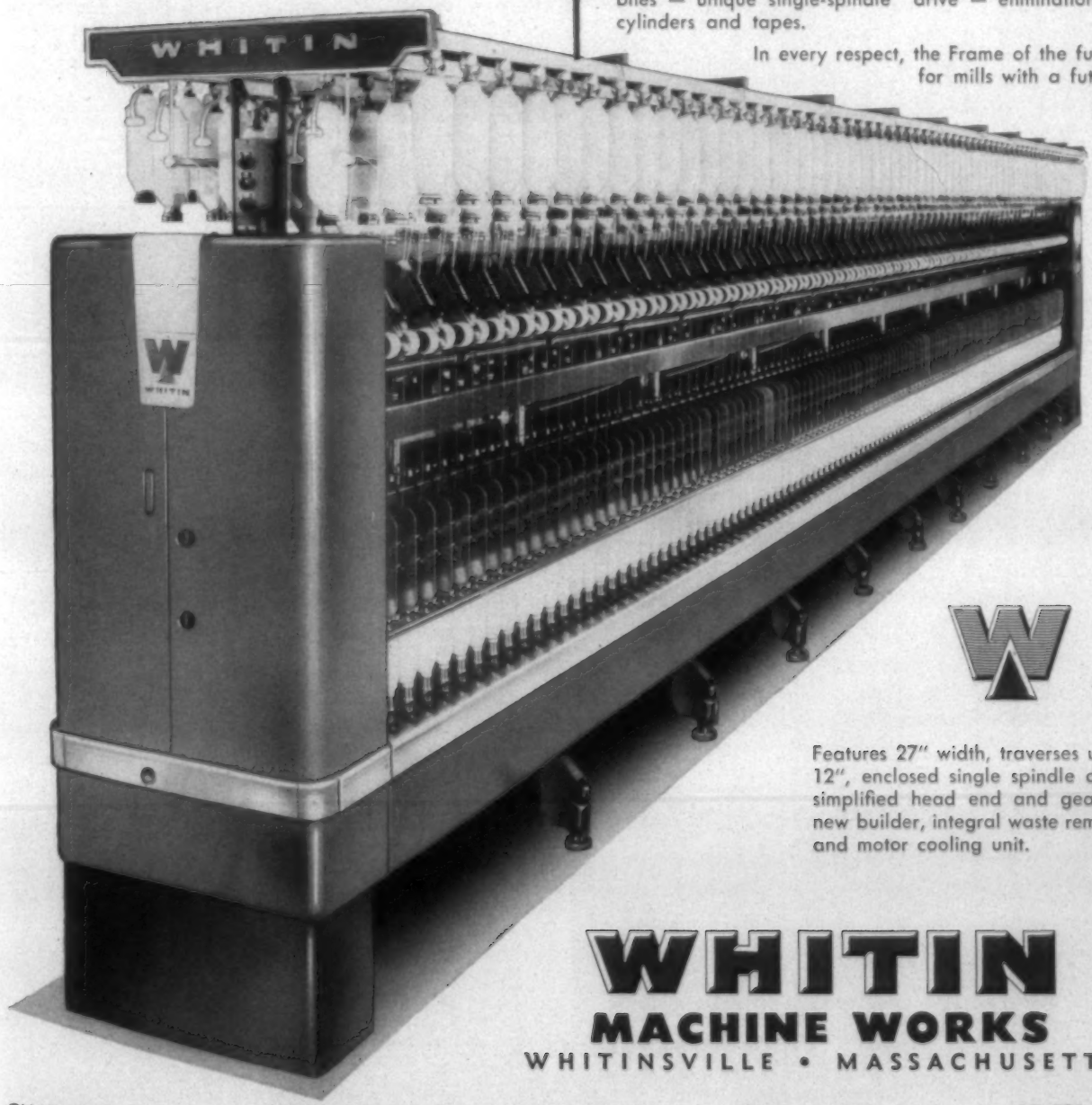
IN the new PIEDMONT, Whitin offers you a Spinning Frame which is not only smart in appearance, not only advanced in design — but which is also foremost in economy of operation. There are PIEDMONT benefits in every phase of your spinning operation.

PRODUCTION: Increases in front roll speed of 25 to 30% more than *average* production — and up to 15% more than *top current* levels.

PERFORMANCE: Simple construction with "built-in" efficiencies — straight line spinning plus SUPER-DRAFT for quality yarn — large "control-wound" packages for reduced spooling costs.

MAINTENANCE: Lowest cleaning costs possible thru streamlining — open construction — ball bearing assemblies — unique single-spindle drive — elimination of cylinders and tapes.

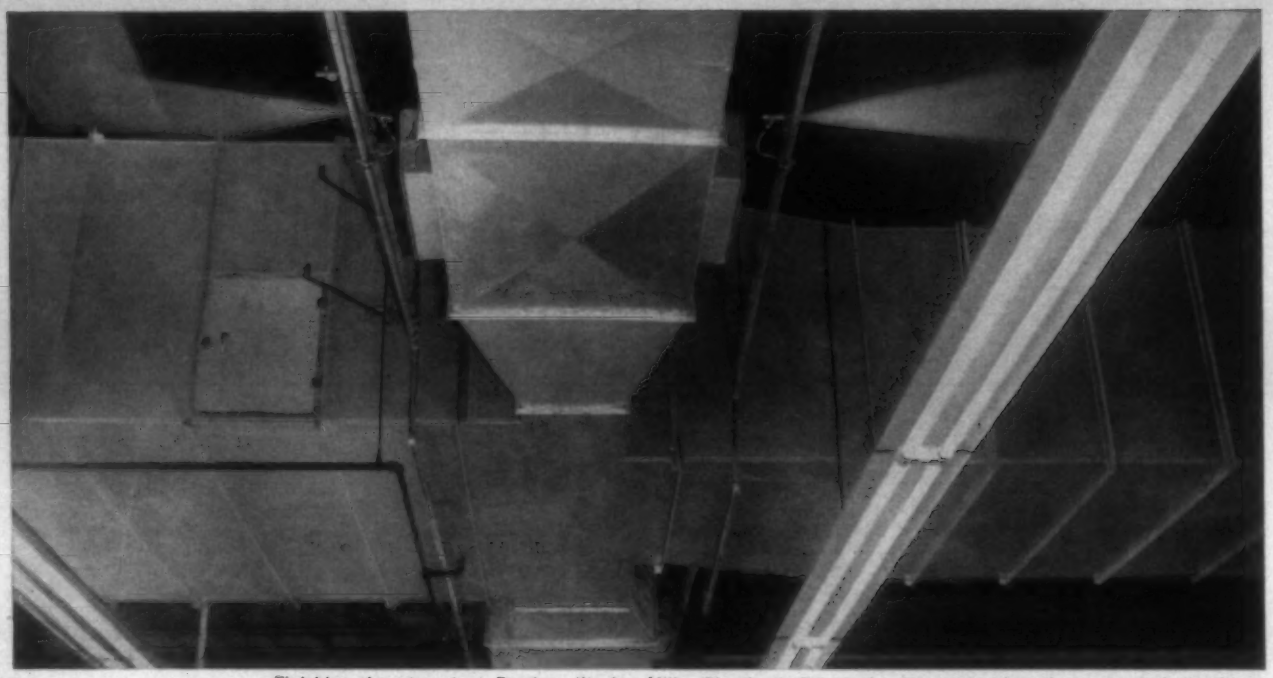
In every respect, the Frame of the future for mills with a future!



Features 27" width, traverses up to 12", enclosed single spindle drive, simplified head end and gearing, new builder, integral waste removal and motor cooling unit.

WHITIN
MACHINE WORKS
WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



Finishing department at Peerless Woolen Mills, Cleveland, Tenn., showing ductwork and zone control atomizers.

PEERLESS WOOLEN MILLS

chose Amco Air Conditioning at its Cleveland Tenn. Plant to be

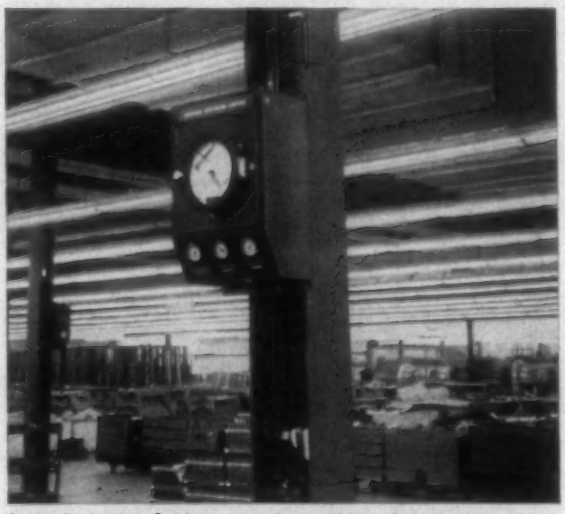
INDEPENDENT OF OUTSIDE WEATHER

An Amco dual (split) system has given Peerless Woolen Mills exactly what was wanted... tailor-made *inside air* regardless of *outside weather!*

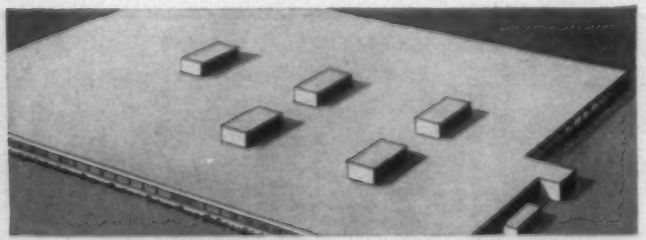
Amco Central Station Air Conditioning, augmented by room atomizers, permits each of the different manufacturing areas in this 10-acre building to be controlled separately.

Peerless spared nothing to assure this *profitable precision control* of temperature and humidity. Over 1000 tons of refrigeration capacity and 3 miles of ductwork were provided. Five of industry's largest commercial fans were installed.

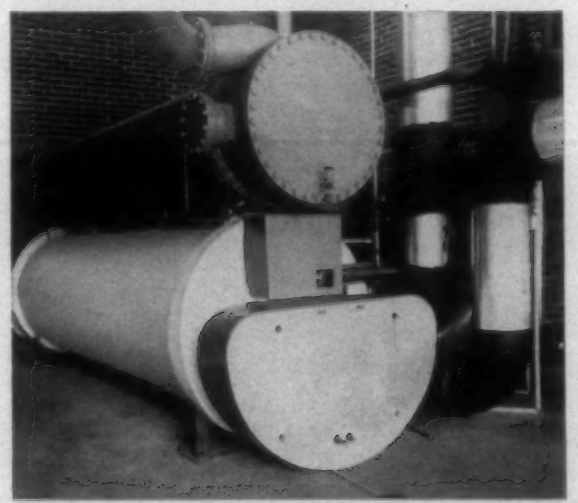
If you have a textile mill conditioning problem, ask an Amco engineer to call. There's no obligation.



Amco Aspirating Cabinet controls condition of air in weave room. Air temperature and humidity register on recorder chart.



On top of mill building are 5 apparatus rooms, each housing fan, air washer, filter, and chilled water tank.

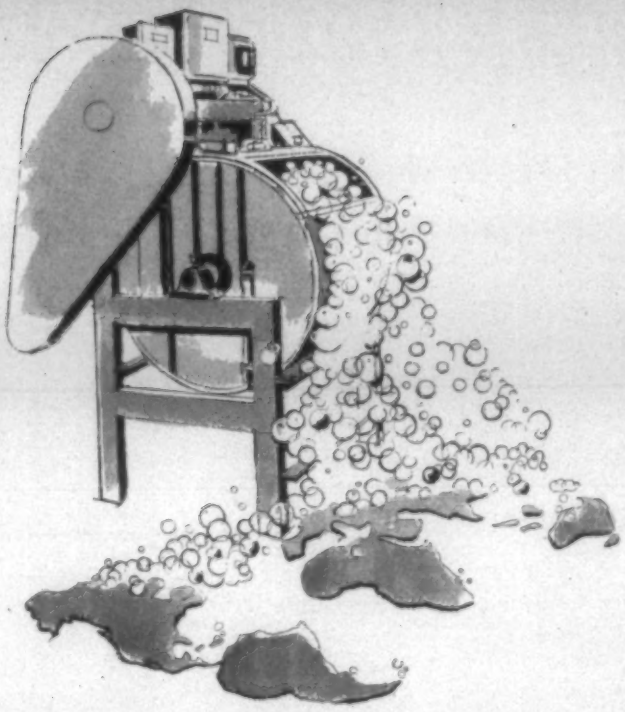


1000-ton capacity refrigeration machine is used for temperature control the year-round. Condenser is at top; chiller at bottom.

AMERICAN MOISTENING COMPANY

Makers of Air Conditioning Systems and Textile Mill Equipment Since 1888

Home office and plant: Cleveland, N.C. Branches in Atlanta, Providence, Toronto.



During 1958 alone, close to *a million and a half* hour-long wash tests . . . carried on day after day in textile plants in 39 countries . . . helped safeguard the integrity of the "Sanforized" trademark.

And again in 1958, the "Sanforized" trademark was used by more textile leaders . . . to help build their profits . . . than in any other year in history.

Here are the firms . . .

ARGENTINA

FABRICA ARGENTINA DE ALPARGATAS S.A.I.C. ..... Buenos Aires
T.I.B.A.T., SOCIEDAD ANONIMA ..... Buenos Aires
SEDALANA S. A. ..... Buenos Aires
CASTELAR S. A. ..... Buenos Aires

AUSTRALIA

BRADFORD COTTON MILLS LIMITED ..... "Bradmil House," Camperdown, Sidney, N.S.W.
BRADFORD COTTON MILLS (AUSTRAL) PTY. LTD. ..... Melbourne
DAVIES, COOP (B. D. A.) PTY. ..... Melbourne

AUSTRIA

CARL GANAHL & CO. ..... Feldkirch
F. M. HAEMMERLE ..... Dornbirn
JOSEF KEIM & SOHN ..... Hirtenberg
POTTENDORFER SPINNEREI UND FELIXDORFER WEBEREI A. G. ..... Vienna
HERRBURGER & RHOMBERG ..... Dornbirn

BELGIUM

ALSBERGE & VAN OOST, S.A. ..... Gand
Subsidiaries: Teintureries Belges ..... Renaix
Anciennes Usines De Backer De Rudder & Co. ..... Gand
ETABLISSEMENTS TEXTILES FERNAND HANUS S.A. ..... Gand
VETEX S.A. ..... Courtrai
ETABLISSEMENTS TEXTILES THEO & OMER NUYTTENS S.A. ..... Deerlyk
TEINTURES ET APPRETS DE L'ESCAUT S. A. ..... Destelbergen

BRAZIL

SÃO PAULO ALPARGATAS, S. A. ..... São Paulo
COMPANHIA AMERICA FABRIL ..... Rio de Janeiro
COTONIFICIO RODOLFO CRESPI, S.A. ..... São Paulo
CIA. JAUENSE DE FIACAO S.A. ..... São Paulo
S. A. INDUSTRIAS REUNIDAS F. MATARAZZO ..... São Paulo
COTONIFICIO DA TORRE, S.A. ..... Recife
FABRICA DE TECIDOS CARLOS RENAUX, S.A. ..... Brusque, Santa Catarina
ARGOS INDUSTRIAL, S. A. ..... São Paulo
CIA. INDUSTRIAL CATAGUASES ..... Minas Gerais

CANADA

CANADIAN COTTONS LIMITED ..... Montreal, Que.
DOMINION TEXTILE COMPANY, LTD. ..... Magog, Que.
MONTREAL COTTONS LIMITED ..... Valleyfield, Que.
ROBINSON COTTON MILLS, LIMITED ..... Toronto, Ont.
WABASSO COTTON COMPANY, LTD. ..... Three Rivers, Que.
WABASSO COTTON COMPANY, LTD.— EMPIRE COTTON DIVISION ..... Welland, Ont.

CHILE

TEJIDOS CAUPOLICAN, S.A. ..... Concepción
MANUFACTURAS SUMAR, S.A. ..... Santiago
ALGODONES HIRMAS, S. A. ..... Santiago

COLOMBIA

TEJIDOS EL CONDOR, S.A. ..... Medellin
COMPAÑIA COLOMBIANA DE TEJIDOS ..... Medellin
FABRICA DE HILADOS Y TEJIDOS DEL HATO, S.A. ..... Medellin
TEJIDOS UNICA, S.A. ..... Manizales

CUBA

COMPAÑIA TEXTILERA ARIGUANABO, S.A. ..... Habana

DENMARK

BLOCH & ANDRESEN ..... Copenhagen
AKTIESELSKABET DE FORENEDE TEXTILFABRIKKER I. AALBORG ..... Aalborg
A/S GRENAA DAMPVAEVERI ..... Grenaa
VEJLE TEXTILFABRIK C. MOLLER ..... Vejle

EIRE

GALWAY TEXTILE PRINTERS, LTD. ..... Dublin

FINLAND

OY FINLAYSON-FORSSA AB ..... Tammerfors
VAASAN PUUVILLA OY–VASA BOMULL AB ..... Vasa
AB. BJORNEBORGS BOMULL ..... Bjorneborg
TAMMERFORS LINNE-OCHJERN-MANUFAKTUR AKTIE-BOLAG LAPINNIEMI BOMULLSFABRIK ..... Tampere

FRANCE

BLANCHIMENT, TEINTURE, IMPRESSION BOISSIERE FILS. Rouen
BLANCHISSERIE ET TEINTURERIE DE CAMBRAI ..... Cambrai
ETABLISSEMENTS RICHARD FRERES ..... Cholet
ETABLISSEMENTS GAILLIARD & CIE ..... Barentin
GILLET-THAON ..... Paris
TEINTURERIE, APPRETS GRASSIN DELYLE ..... Malaunay (Seine-Inf.)
GUERRY-DUPERAY & FILS ..... Roanne
MANUFACTURES HARTMANN & FILS ..... Munster (Ht. Rhin.)
LAINE FRERES ..... Rouen
TEINTURERIE G. ROQUETTE ..... Wasquehal
TRAITMENTS CHIMIQUES DES TEXTILES ..... Pfastatt-le-Chateau (Ht.-Rhin.)
SOCIETE ANONYME BLANCHISSERIE & TEINTURERIE DE CAUDRY ..... Ile Saint-Denis
SOCIETE ANONYME DE BLANCHIMENTS TEINTURES ET IMPRESSIONS ..... Lyon
SOCIETE GENERALE DES FILATURES ET TISSAGES DE FLERS ..... Flers
SOCIETE DES TEXTILES FRANCAIS ..... Paris
TEXTILE DU VERMANDOIS ..... Laval
TEINTURERIE DOULET ..... Amiens
ETABLISSEMENT FAUCHEUR S.A.R.L. ..... Lille (Nord)

FRENCH MOROCCO

INDUSTRIE COTONNIERE DE MAROC "ICOMA" S.A. ..... Fédala
LARCHER & CIE ..... Casablanca

FRENCH WEST AFRICA

INDUSTRIE COTONNIERE AFRICAINE "ICOTAF" S.A. ..... Dakar

GERMANY

GEBR. BÖGGERING, G.M.B.H. ..... Bocholt
GEBR. BURKHARDT ..... Pfullingen/Württ
MECH. BUNTWEBEREI BRENNET ..... Brennet
DRUCKEREI & APPRETUR BROMBACH A. G. ..... Brombach
M. VAN DELDEN & CO. ..... Gronau
CHRISTIAN DIERIG A. G. ..... Augsburg
BAUMWOLLINDUSTRIE ERLANGEN-BAMBERG A. G. ..... Erlangen
GESELLSCHAFT FÜR SPINNEREI & WEBEREI ETTLINGEN A. G. ..... Ettlingen

CONTINUED ON NEXT PAGE

"SANFORIZED"—the world-wide st

AUGUST GEIGER, KOMM. GES. ..... Kirchheim-Teck
ULRICH GMINDER A.G. ..... Reutlingen
F. H. HAMMERSEN AKTIENGESELLSCHAFT ..... Osnabrück
J. HECKING ..... Neuenkirchen
..... M. Gladbach
GESELLSCHAFT FÜR DRUCKEREI & FÄRBEREI HCH. HOCHAPFEL & SÖHNE ..... M. Gladbach
KOLB & SCHÖLE A.G. ..... Kirchheim-Teck
VEREINIGTE WEBEREI SALZGITTER-STADTOLDENDORF (Wm. Kübler) ..... Stadtoldendorf
GEBR. LAURENZ ..... Ochtrup, West.
MARTINI & CIE ..... Augsburg
NIEHUES & DÜTTING ..... Nordhorn
HEINRICH OTTO & SÖHNE ..... Wendlingen
SPINNEREI UND WEBEREI PFERSEE A. G. ..... Augsburg
LUDWIG POVEL & CO. ..... Nordhorn
TEXTILAUSRÜSTUNG & DRUCKEREI PRINZ A. G. ..... Augsburg
G. SCHLICKER & CO. ..... Osnabrück
J. SCHRÖNDER SÖHNE ..... Greven
G. SCHÜMER & CO. ..... Schüttorf/Hann
B. RAWE & CO. ..... Nordhorn
BLEICHEREI, FAERBEREI & APPRETUR-ANSTALT UHINGEN, A. G. ..... Uhingen
GEBRÜDER WENDLER G.M.B.H. ..... Reutlingen
AUSRÜSTUNG AN DER WIESE G.M.B.H. ..... Brombach
HERMANN WINDEL, G.M.B.H. ..... Windelsbleiche
F. A. KÜMPERS ..... Rheine an der Ems
MÜLFORTER ZEUGDRUCKEREI UND FÄRBEREI ..... Rheydt-Mülfort
VIERSENER BAUMWOLL-FEINWEBEREI G.M.B.H. ..... Viersener, Rhein.
WEBER & OTT AKTIENGESELLSCHAFT ..... Forchheim/Oberfranken
SPINNEREI UND WEBEREIN ZELL-SCHÖNAU AKTIENGESELLSCHAFT ..... Zell, Wiesental

GREAT BRITAIN

BLEACHERS' ASSOCIATION LIMITED ..... Blackfriars House, Parsonage, Manchester 3
In Eleven Branches as Follows:
A. C. Bealey & Sons Ltd. ..... Radcliffe, Lancs.
T. R. Bridson & Sons, Ltd. ..... Bolton
Chorley Bleaching Co., Ltd. ..... Common Bank, Chorley
Carey McClellan & Co., Ltd. ..... Ardmore Bleach Works, Londonderry, Northern Ireland
Eden & Thwaites, Ltd. ..... Edgeley Bleachworks, Stockport, Cheshire
Kirkpatrick Bros., Ltd. ..... Ballyclare, County Antrim, Northern Ireland
J. McHaffie & Son Ltd., Kirktonfield, Neilston (near Glasgow), Scotland
River Etherow Bleaching Co., Ltd. ..... Hollingworth, Manchester
John Stanning & Sons, Ltd. ..... Leyland Bleachworks, Leyland, Preston
Sykes & Co. Ltd. ..... Edgeley Bleachworks, Stockport, Cheshire
John Whitehead of Elton Ltd. ..... Radcliffe Bleach Works, Radcliffe, nr. Manchester
BRADFORD DYERS' ASSOCIATION, LTD. ..... 39 Well Street, Bradford
In Four Branches as Follows:
Ashenhurst Dyeing Co., Ltd., Ashenhurst Works ..... Blackley
John & Henry Bleackley Ltd. ..... Myrtle Grove, Prestwich
Lowmoor & Water Lane Ltd., Woodroyd Dye Works ..... Low Moor
Standish Co. Ltd. ..... Worthington nr. Wigan
J. CHADWICK & CO., LTD. ..... Springbrook Works, Oldham, Lancs.
CLIFTON MILLS, LIMITED ..... Poolstock Mills, Wigan, Lancs.
DEAKINS, LIMITED ..... Egerton Dye Works, nr. Bolton
DROMONA & MAINE LIMITED ..... Cullybackey, County Antrim, Northern Ireland
SMITH & NEPHEW TEXTILES LIMITED ..... Colne, Lancs.
P. W. GREENHALGH & CO., LTD. ..... Ogden Mill, New Hey (nr. Rochdale) Lancs.
GROVE DYEING CO., LTD. ..... Littleborough, Lancs.
J. J. HADFIELD, LTD. ..... Garrison Bleach & Dye Works, Birch Vale
J. MANDLEBERG & CO., LTD. ..... Albion Works, Pendleton, Salford 6, Lancs.
PIN CROFT DYEING AND PRINTING CO., LTD. ..... Adlington, Lancs.
RAINSHORE BLEACHING & DYEING CO., LTD. ..... Norden, Lancs.
STEVENSON & SON, LTD. ..... Dungannon, Northern Ireland
TURNBULL & STOCKDALE, LTD. ..... Rosebank Print Works, Ramsbottom, nr. Manchester
JOHN WALTON OF GLOSSOP, LTD. ..... Hollingworth, Cheshire
DAVID WHITEHEAD & SONS, LTD. ..... Lower Mill, Rawtenstall
YORKSHIRE DYEING & PROOFING COMPANY, LTD. ..... Spring Vale Works, Middleton, Lancs.
THE SILVER SPRINGS BLEACHING & DYEING COMPANY LIMITED ..... Timbersbrook, Congleton, Cheshire
YORK STREET FLAX SPINNING CO., LTD. ..... Belfast, Northern Ireland

GREECE

PIRAIKI-PATRAIKI INDUSTRIE DE COTON S.A. ..... Athens

HOLLAND

BLIJDENSTEIN & CO., N. V. ..... Enschede
BOEKELOSCHE STOOMBLEEKERIJ N. V. ..... Boekelo
VAN HEEK & CO., N. V. ..... Enschede
KONINKLIJKE STOOMWEVERIJ TE NIJVERDAL N. V. ..... Almelo
KONINKLIJKE TEXTIEL VEREDELINGSINDUSTRIE V/H G. J. TEN CATE & ZONEN N. V. ..... Eibergen
N. V. NEDERLANDSCHE STOOMBLEEKERIJ ..... Nijverdal
J. F. SCHOLTEN & ZONEN N. V. ..... Enschede
N. V. STOOM-SPINNERIJEN EN WEVERIJEN V.H.S.J. SPANJAARD ..... Borne
TER KUILE CROMHOFF N. V. ..... Enschede
TWENTSCHE STOOMBLEEKERIJ N. V. ..... Goor

HONG KONG

CHINA DYEING WORKS, LTD. ..... Hong Kong
JARDINE DYEING & FINISHING CO., LTD. ..... Hong Kong

INDIA

BINNY & CO. (MADRAS) LTD. ..... Madras
In Plants as Follows:
The Bangalore Woollen, Cotton & Silk Mills Co., Ltd. ..... Bangalore
The Buckingham & Carnatic Co., Ltd. ..... Madras
THE ARVIND MILLS LTD. ..... Ahmedabad
SHRI AMBICA MILLS, LTD. ..... Ahmedabad
AHMEDABAD MANUFACTURING & CALICO PRINTING CO., LTD. ..... Ahmedabad
KOHINOOR MILLS COMPANY LTD. ..... Bombay
SARANGPUR COTTON MANUFACTURING CO., LTD. ..... Ahmedabad
THE NEW SHORROCK SPG. & MFG. CO., LTD. ..... Nadiad, Bombay State
ROHIT MILLS LIMITED ..... Ahmedabad
THE AHMEDABAD JUPITER WVG. & MFG. CO., LTD. ..... Ahmedabad
THE ARYODAYA GINNING & MFG. CO. LTD. ..... Ahmedabad
THE NEW COMMERCIAL MILLS CO., LTD. ..... Ahmedabad
THE STANDARD MILLS CO., LTD. ..... Bombay
THE COMMERCIAL AHMEDABAD MILLS CO., LTD. ..... Ahmedabad
THE VIJAYA MILLS CO., LTD. ..... Ahmedabad
THE AHMEDABAD COTTON MFG. CO., LTD. ..... Ahmedabad
THE MANEKLAL HARILAL SPG. & MFG. CO., LTD. ..... Ahmedabad
THE VIKRAM MILLS LIMITED ..... Ahmedabad
THE ARUNA MILLS CO., LTD. ..... Ahmedabad
THE ELGIN MILLS CO., LTD. ..... Kanpur
THE RUSTOM JEHANGIR VAKIL MILLS CO., LTD. ..... Ahmedabad
THE GAEKWAR MILLS LTD. ..... Billimora, Baroda State
THE BOMBAY DYEING & MFG. CO., LTD. ..... Bombay

ISRAEL

KURDANEH TEXTILE WORKS, LTD. ..... c/o "Ata" Textile Co., Ltd., Haifa

ITALY

COTONIFICIO CANTONI ..... Legnano
MANIFATTURA BERNARDO CAPROTTI ..... Albiate
TICOSA S.P.A. ..... Como
PRIMO FASOLA S.P.A. ..... Milano
COTONIFICIO FELICE FOSSATI S.P.A. ..... Monza
COTONIFICIO LEGLER S.A. ..... Bergamo
MANIFATTURE COTONIERE MERIDIONALI ..... Napoli
REGGIANI MANIFATTURA, S.A. ..... Bergamo
TEXTILOSES & TEXTILES S.A. ..... Milano
MANIFATTURA TOSI ..... Busto Arsizio
UNIONE MANIFATTURE S.A. ..... Parabiago
COTONIFICIO VALLE DI SUSA ..... Torino
ROBERTO CERANA ..... Busto Arsizio
CESARE CERANA ..... Busto Arsizio
IRIS S.P.A. ..... Urgnano
GIOVANNI CLERICI E FIGLI S.P.A. ..... Gallarate
COTONIFICIO ROSSI S.P.A. ..... Vincenza

JAPAN

KANEGAFUCHI SPINNING CO., LTD. ..... Osaka
NISSHIN COTTON SPINNING CO., LTD. ..... Tokyo
KUREHA SPINNING CO., LTD. ..... Osaka
TOYO SEN-I CO., LTD. ..... Tokyo
FUJI SPINNING CO., LTD. ..... Tokyo
HAMAGUCHI DYEING WORKS, LTD. ..... Kyoto
ICHISHIN BLEACHING CO., LTD. ..... Osaka, Pref.
YAMATOGAWA DYEING WORKS, LTD. ..... Sakai, Osaka
DAIDO DYEING COMPANY, LTD. ..... Kyoto
KURASHIKI SPINNING CO., LTD. ..... Osaka
NITTO SPINNING CO., LTD. ..... Tokyo
HAMANO TEXTILE INDUSTRY CO., LTD. ..... Tokyo
KYOTO BLEACHING & DYEING CO., LTD. ..... Kyoto
DAI NIPPON SPINNING CO., LTD. ..... Osaka
DAIWA DYEING CO., LTD. ..... Shizuoka Pref.
TOYO DYEING INDUSTRY CO., LTD. ..... Osaka
TOYO SPINNING CO., LTD. ..... Osaka

LEBANON

ARIDA BROTHERS CORPORATION ..... Tripoli, Lebanon

MEXICO

ACABADOS MEXICO, S.A. ..... Tlalpan, México, D. F.
ACABADOS MONTERREY, S.A. ..... Leona, N. L.
ACABADOS TEXTILES LOURDES, S.A. ..... San Pablo, Tlax.
ACABADOS TEXTILES SAN FRANCISCO, S.A. ..... Mexico, D. F.
ATOYAC TEXTIL S.A. ..... Puebla
AYOTLA TEXTIL, S.A. ..... Mexico, D. F.
CIA. INDUSTRIAL TEXTIL ANAHUAC, S.A. ..... Puebla
CIA. INDUSTRIAL DE PARRAS, S.A. ..... Parras, Coahuila
CIA. INDUSTRIAL DE SAN ANTONIO ABAD, S.A. ..... Mexico, D. F.
CIA. INDUSTRIAL VERACRUZANA, S.A. ..... Ciudad Mendoza, Ver.
EL GLOBO, S.A. ..... Atzcapotzalco, Mexico, D. F.
ELSA, S.A. ..... Coyoacán, Mexico, D. F.
LA CONCHA, S.A., HILADOS TEJIDOS Y ACABADOS ..... Mexico, D. F.
TEXTILES LA CAROLINA Y REFORMA, S.A., HILADOS, TEJIDOS Y ACABADOS ..... Mexico, D. F.
NACIONAL TEXTIL MANUFACTURERA, S.A. ..... Guadalajara, Jalisco
TEXTILES MONTERREY, S.A. ..... Monterrey, N. L.
MARTEX, S.A. ..... Xalostoc, Mexico
TEXTILES TEJA, S.A. ..... Puebla, Pue.

NORWAY

A/S ARNE FABRIKKER ..... Ytre [illegible]na
A/S DALE FABRIKKER ..... Be[illegible]gen
HALDENS BOMULDSSPINDERI & VAEVERI ..... H[illegible]den
A/S HOIE FABRIKKER ..... M[illegible]by

standard of shrinkage control

PARAGUAY

MANUFACTURA DE PILAR, S.A. ..... Pilar

PERU

COMPAÑIAS UNIDAS VITARTE, VICTORIA, INCA, S.A. ..... Lima
FABRICA DE TEJIDOS "LA UNION" LTDA. ..... Lima
FABRICA DE TEJIDOS "LA BELLOTA", S.A. ..... Lima
TEXTILES NUEVO MUNDO, S.A. ..... Lima

PHILIPPINES

NATIONAL DEVELOPMENT COMPANY ..... Manila

PORTUGAL

FABRICA DE BRANQUEACAO E ACABAMENTOS, LDA. ..... Porto

SOUTH AFRICA

BERG RIVER TEXTILES LIMITED ..... Paarl, C.P.
S. B. H. COTTON MILLS (PTY.) LTD. ..... Cape Town
CONSOLIDATED FINE SPINNERS & WEAVERS, LIMITED ..... Jacobs, Natal

SOUTHERN RHODESIA

DAVID WHITEHEAD & SONS (RHODESIA) LIMITED ..... Hartley

SPAIN

SOBRINOS DE JUAN BATLLO S.A. ..... Barcelona
FIBRACOLOR, S.A. ..... Barcelona
VIUDA DE JOSE TOLRA, S.A. ..... Barcelona
COMERCIAL ANONIMA VILA ..... Barcelona

SWEDEN

ALINGSAS BOMULLSVÄVERI AKTIEBOLAG ..... Alingsas
BORAS WÄFVERI AKTIEBOLAG ..... Boras
GAMLESTADENS FABRIKERS AKTIEBOLAG ..... Göteborg
GEFLE MANUFAKTUR AKTIEBOLAG (Hargskoncernen) ..... Stroemsbro
MANUFAKTUR AKTIE BOLAGET I MALMÖ ..... Malmö
MÖLNLYCKE VAFVERIAKTIEBOLAG ..... Göteborg
NORRKÖPINGS BOMULLSVÄFVERI A. B. ..... Norrköpings

SWITZERLAND

AKTIENGESELLSCHAFT CILANDER ..... Herisau
A. G. FEHLMANN SOHNE ..... Schoftland
GUGELMANN & CO., A. G. ..... Langenthal
HABIS-TEXTIL A. G. ..... Flawil
HEBERLEIN & CO., A. G. ..... Wattwil
AKTIENGESELLSCHAFT A. & R. MOOS ..... Weisslingen
R. MUELLER & CIE. A. G. ..... Seon
RADUNER & CO., A. G. ..... Horn
STOFFEL & CO. ..... St. Gallen
AKTIENGESELLSCHAFT CARL WEBER ..... Winterthur

UNITED STATES

AMERICAN FINISHING COMPANY ..... Memphis, Tenn.
ARISTA MILLS CO. ..... Winston-Salem, N. C.
ARMS TEXTILE MANUFACTURING CO. ..... Manchester, N. H.
AURORA BLEACHERY, INC. ..... Aurora, Ill.
AVONDALE MILLS ..... Alexander City, Ala.
AVONDALE MILLS ..... Pell City, Ala.
AVONDALE MILLS ..... Sylacauga, Ala.
BOS. BANCROFT & SONS CO. ..... Wilmington, Del.
BERKSHIRE HATHAWAY, INC.
King Philip Finishing Division ..... Lonsdale, R. I.
BRADFORD DYEING ASSOCIATION (USA) ..... Westerly, R. I.
BRENHAM COTTON MILL, INC. ..... Brenham, Texas
BUCK CREEK COTTON MILLS ..... Siluria, Ala.
BURLINGTON INDUSTRIES, INC.,
Cramerton Mills Division ..... Cramerton, N. C.
BURLINGTON INDUSTRIES, INC.,
Mooresville Mills Division ..... Mooresville, N. C.
BURLINGTON INDUSTRIES, INC.,
Old Dominion Finishing Company ..... Hurt, Va.
BURLINGTON INDUSTRIES, INC., POSTEX COTTON MILLS DIVISION ..... Post, Texas
CANNON MILLS COMPANY ..... Kannapolis, N. C.
CANTON COTTON MILLS ..... Canton, Ga.
CHICOPEE MANUFACTURING CORPORATION ..... Chicopee Falls, Mass.
CHICOPEE MANUFACTURING CORPORATION ..... Gainesville, Ga.
CLEARWATER FINISHING PLANT ..... Clearwater, S. C.
COLD SPRING BLEACHERY, INC. ..... Yardley, Pa.
COMMANDER MILLS, INC. ..... Sand Springs, Okla.
CONE MILLS CORPORATION—Carlisle Plant ..... Carlisle, S. C.
CONE MILLS CORPORATION—Print Works Plant ..... Greensboro, N. C.
CONE MILLS CORPORATION—Revolution Division ..... Greensboro, N. C.
CONE MILLS CORPORATION—Salisbury Plant ..... Salisbury, N. C.
CONE MILLS CORPORATION—White Oak Plant ..... Greensboro, N. C.
COWIKEE MILLS ..... Eufaula, Ala.
CRANSTON PRINT WORKS COMPANY ..... Cranston, R. I.
CRANSTON PRINT WORKS COMPANY ..... Webster, Mass.
CRANSTON PRINT WORKS COMPANY ..... Fletcher, N. C.
CROMPTON-SHENANDOAH CO. ..... Waynesboro, Va.
CRYSTAL SPRINGS BLEACHERY, INC. ..... Chickamauga, Ga.
DALE BROOK FINISHING CO., INC. ..... Ho-ho-kus, N. J.
DANIELSON FINISHING CO., INC. ..... Danielson, Conn.
DAN RIVER MILLS, INCORPORATED ..... Danville, Va.
DAN RIVER MILLS, INCORPORATED—
Alabama Mills Div. ..... Wetumpka, Ala.
DEFIANCE BLEACHERY ..... Barrowsville, Mass.
DEMPSEY BLEACHERY & DYE WORKS CORP. ..... Pawtucket, R. I.
ERWIN MILLS INCORPORATED ..... Cooleemee, N. C.
ERWIN MILLS INCORPORATED ..... Durham, N. C.
ERWIN MILLS INCORPORATED ..... Erwin, N. C.
ERWIN MILLS INCORPORATED ..... Stonewall, Miss.
EUREKA PRINTING CO., INC. ..... Clifton, N. J.
EXETER MANUFACTURING COMPANY ..... Exeter, N. H.
FIELDCREST MILLS, INC. ..... Spray, N. C.
FRUIT OF THE LOOM, INC.—Pontiac Finishing Plant ..... Pontiac, R. I.
GOLD-TEX FABRICS CORP.—Mill Division ..... Rock Hill, S. C.
GRANITEVILLE COMPANY—Gregg Division ..... Graniteville, S. C.
GRANITEVILLE COMPANY—Sibley-Enterprise Division ..... Augusta, Ga.
GREAT FALLS BLEACHERY & DYE WORKS, INC. ..... Somersworth, N. H.
HAMPTON MILLS, INC. ..... Easthampton, Mass.
HIGHLAND PARK MANUFACTURING CO. ..... Charlotte, N. C.
HUDSON PIECE DYE WORKS, INC. ..... Paterson, N. J.
THE JEFFERSON MILLS, INC. ..... Jefferson, Ga.
THE KENDALL COMPANY ..... Walpole, Mass.
KERR BLEACHING & FINISHING WORKS, INC. ..... Concord, N. C.
THE LANCASHIRE TEXTILE PROCESSING CORPORATION ..... New Bedford, Mass.
LANETT BLEACHERY & DYE WORKS ..... West Point, Ga.
LOWELL BLEACHERY, INC. ..... St. Louis, Mo.
LOWELL BLEACHERY SOUTH ..... Griffin, Ga.
LYMAN PRINTING & FINISHING CO., INC.,
Subsidiary of M. Lowenstein & Sons, Inc. ..... Lyman, S. C.
ANDREW Y. MICHIE & SONS CO. ..... Philadelphia, Pa.
THE MILLVILLE MANUFACTURING CO. ..... Millville, N. J.
MISSION VALLEY MILLS, INC. ..... New Braunfels, Texas
NASHUA FINISHING CO., INC. ..... Nashua, N. H.
NATIONAL DYEING & FINISHING CORPORATION ..... Culver City, Calif.
NEWBURGH PRINTING & FINISHING COMPANY, INC. ..... Newburgh, N. Y.
NORTH CAROLINA FINISHING COMPANY ..... Salisbury, N. C.
NORTHERN DYEING CORPORATION ..... Washington, N. J.
OLD FORT FINISHING PLANT ..... Old Fort, N. C.
PACOLET MANUFACTURING CO. ..... New Holland, Ga.
PEPPERELL MANUFACTURING COMPANY ..... Lewiston, Me.
PEPPERELL MANUFACTURING COMPANY ..... Lindale, Ga.
PEPPERELL MANUFACTURING CO.—
Alabama Division ..... Pepperell, Ala.
PEQUOT FINISHING PLANT,
Division Indian Head Mills, Inc. ..... Whitney, S. C.
PILOT MILLS CO. ..... Raleigh, N. C.
PLYMOUTH FINISHING CO., INC. ..... Fall River, Mass.
PURITAN LOOMS, INCORPORATED ..... Philadelphia, Pa.
THE RANDOLPH MILLS, INC. ..... Franklinville, N. C.
REEVES BROTHERS, INCORPORATED—
Eagle & Phenix Division ..... Columbus, Ga.
REEVES BROTHERS, INCORPORATED—
Fairforest Finishing Div. ..... Spartanburg, S. C.
RENFREW BLEACHERY (Abney Mills) ..... Travellers Rest, N.C.
RIEGEL TEXTILE CORPORATION—
Ware Shoals Division ..... Ware Shoals, S. C.
RIEGEL TEXTILE CORPORATION—Trion Division ..... Trion, Ga.
ROBERTSON BLEACHERY, INC. ..... New Milford, Conn.
ROCK HILL PRINTING & FINISHING CO. ..... Rock Hill, S. C.
THE ROCKLAND BLEACH & DYE WORKS CO. ..... Baltimore, Md.
THE RUSSELL MFG. CO., INC. ..... Alexander City, Ala.
SAYLES-BILTMORE BLEACHERIES, INC. ..... Biltmore, N. C.
SAYLES FINISHING PLANTS, INC. ..... Saylesville, R. I.
PHILIP L. SHEERR & SONS ..... Frankford, Philadelphia, Pa.
SOUTHERN BLEACHERY & PRINT WORKS, INC. ..... Taylors, S. C.
THE SPRINGS COTTON MILLS (Grace Bleachery) ..... Lancaster, S. C.
STANDARD BLEACHERY & PRINTING CO., INC. ..... Carlton Hill, N. J.
J. P. STEVENS & CO., INC.—Appleton Plant ..... Anderson, S. C.
J. P. STEVENS & CO., INC.—Delta Plant ..... Cheraw, S. C.
J. P. STEVENS & CO., INC.—Industrial Plant ..... Rock Hill, S. C.
J. P. STEVENS & CO., INC.—Utica-Mohawk Plant ..... Clemson, S. C.
SUMMERDALE DYE WORKS ..... Holmesburg, Phila., Pa.
SWIFT MANUFACTURING COMPANY ..... Columbus, Ga.
TEXAS TEXTILE MILLS, INC. ..... McKinney, Texas
TEXAS TEXTILE MILLS, INC. ..... Waco, Texas
THOMASTON MILLS—Bleachery Div. ..... Thomaston, Ga.
UNION BLEACHERY ..... Greenville, S. C.
USF—ASPINOOK Finishing Division of Gera Corporation ..... Hartsville, S. C.
USF—ASPINOOK Finishing Division of Gera Corporation ..... Adams, Mass.
WADE MANUFACTURING COMPANY ..... Wadesboro, N. C.
WALDRICH COMPANY ..... Delawanna, N. J.
WERTHAN BAG CORPORATION ..... Nashville, Tenn.
YATES BLEACHERY CO. ..... Flintstone, Ga.

URUGUAY

S. A. FABRICA URUGUAYA DE ALPARGATAS ..... Montevideo

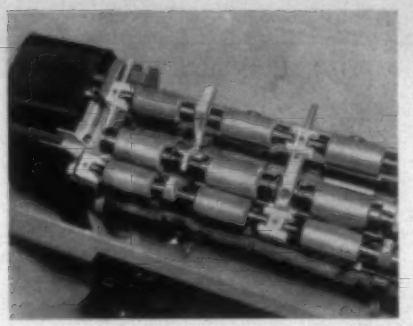
VENEZUELA

C. A. TELARES DE PALO GRANDE ..... Caracas
TOCOME INDUSTRIA TEXTIL S.A. ..... Caracas
C. A. TELARES DE MARACAY ..... Maracay

For The Textile Industry's Use

– NEW MACHINERY, EQUIPMENT AND SUPPLIES –

Nylon Cap Bar Tip



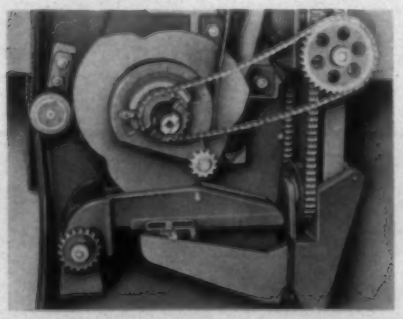
Saco-Lowell's new nylon cap bar tip in position on shop drafting element.

Saco-Lowell Shops replacement parts division, Greenville, S. C., is now offering an inexpensive new nylon cap bar tip said to be superior to standard cast tips for performance, efficiency and longer life.

Comparison tests are said to have shown that the new tips not only greatly reduce cap bar block wear, but also improve running conditions. They require no oiling, thus eliminating one of the major causes of yarn soilage and lint accumulation.

The new nylon cap bar blocks are designed for application and easy installation on all existing frames in place of standard cast tips. No frame changes are required. This practical changeover to molded nylon tips reportedly assures important savings and provides the advantages of easy cleaning, the elimination of oiling points, and longer wear of both the tip itself and the top roll gudgeon. (Request Item No. B-1)

Spinning Cam



The new Whitin cam provides high speed spooling off.

A new spinning cam for filling wind providing spooling off at 1,230 y.p.m. from large packages is now available from Whitin Machine Works, Whitinsville, Mass. Use of the cam is said to permit the advantages of filling wind in spinning and at the same time high spooling speeds. It is expected that this cam will result in much greater use of filling wind in place of combination or warp winds.

The better winding secured will effect a decrease in ends-down. The cam was developed by Whitin for its new Piedmont spinning frame. Slightly modified, it can be used on all conventional spinning frames. (Request Item No. B-2)

Medium Grey Dye

With the introduction of Cibanone Grey BG Paste, Ciba Co., New York City, is offering a Microfined dye it claims has the finest level-dyeing properties of all vat greys. The uniform penetration and slow exhaustion reported for this dye are said to make it of particular interest for dyeing grey shades on beams and packages, but its superior leveling qualities are also said to be apparent in piece goods dyeing.

Cibanone Grey BG Paste presents a medium grey self-shade, or the color may be shaded to any related cast with most vat dyes of similar application properties. It is especially recommended as a component in yarn dyeing formulas for ginghams, fine poplin shirtings and household furnishing fabrics. Top fastness to light and washing, and the characteristic properties of the Cibanone Microfined process for vat dyes are also claimed for Cibanone Grey BG Paste.

Additional emphasis on the versatility of Cibanone Grey BG Paste is given by its stability to a number of resin finishes, Ciba reports. Aftertreatment of dyeings with Lyofix PR for minimum-care finishes is said to produce practically no change in shade or in the light fastness of the dyeing. (Request Item No. B-3)

Aftercoppering Yellow

Cuprofix Yellow C-2RLN p.a.f. is a new aftercoppering hue, giving a bright reddish yellow, developed by Sandoz Inc., New York City. Its fastness to light is said to be outstanding, either with Cuprofix or with copper sulfate aftertreatment. Washfastness is very good, and its fastness to perspiration is exceptional. Resin finishing causes no change in shade or loss of fastness to light, Sandoz reports. Cuprofix Yellow C-2RLN p.a.f. reserves acetate. It may be combined with all other Cuprofix "C" dyes. (Request Item No. B-4)

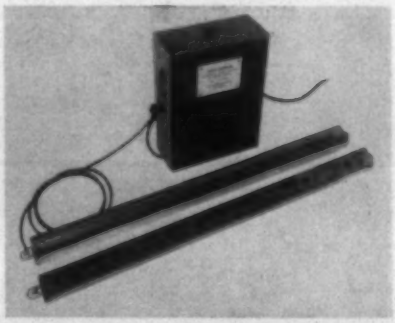
Spigot For Drums

Antara Chemicals, a sales division of General Aniline & Film Corp., is now enclosing a handy, easy-to-use plastic spigot in all 30-gallon closed head drums in which it ships liquid Blancophor, the company's optical brightening agent for the textile industry.

The spigot is contained in the underside of the large 2" cap of the drum. For use it is only necessary to remove this cap, unscrew the spigot, replace the cap, remove a ¾" cap on the drum and screw in the spigot. The ¾" cap is then replaced and the drum tilted on its side, spigot down and closed. The contents of the drum can then be measured out through the spigot into a suitable container. Simple directions for use of the spigot are carried on the head of each drum.

(Request Item No. B-5)

Static Eliminator



This new static eliminator is manufactured by Lance Engineering Co. Ltd., England, and distributed in the U. S. by Lindly & Co.

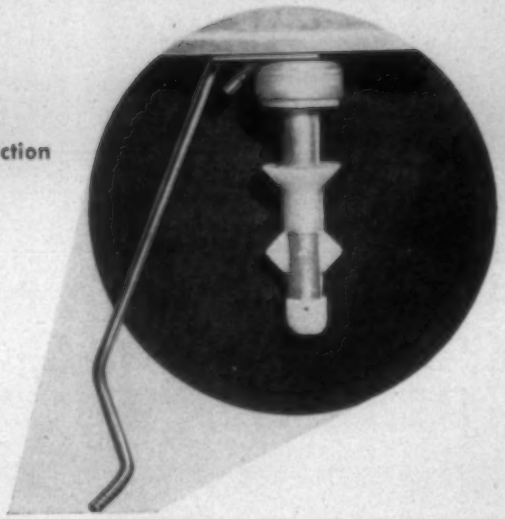
Lindly & Co., Mineola, N. Y., is making available a textile static eliminator which is said to achieve higher efficiency through two basic design changes. One is in the shape of the electrode shield. The usual tubular shields limit the proximity of yarn and electrode head to a distance greater than the radius of that tube. The new square shape utilized in this unit permits the yarn sheet to come much closer to the electrode head without risk of damage to the yarn.

The second design change is in the construction of this shield. The top surface is one continuous slot which extends the full length of the shield. The bottom, opposing surface, is perforated. This "through" construction is said to permit ionization to create an upward draft which increases the ion dispersion rate. It minimizes the collection of dirt within the shield which causes invisible "tracking" and also minimizes the collection of solvents on electrode heads which might cause toxic gases when the current is on, Lindly reports.

By extending the full length of electrode bar and heads, the slot is said to eliminate the dead metal usually found in a shield. It creates a continuous bar of ionized air that insures that all yarn ends get equal relief. The "through" construction design

Roberts Bobbin Holder

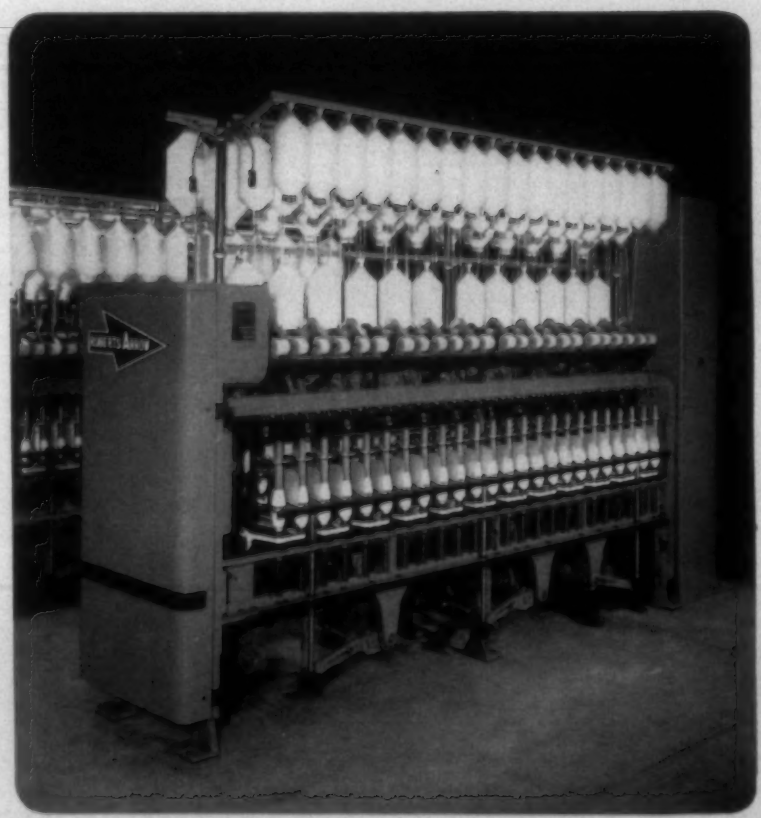
- Snaps off by hand for easy cleaning and inspection
- Retainer type ball bearing for uniform rotation
- Inside spring completely enclosed to keep lint out
- Automatic latching and bobbin release of simple sturdy construction
- Mounts easily on creel channel or on wood creel boards



A FEATURE OF

ROBERTS ARROW

ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



Very Advanced

ARROW SPINNING features:

PosiWate Top Roll Suspension
UnaRing Balloon Control
EvenGrip Fluted Bottom Rolls
Roberts Supreme Ball Bearing Spindles
Double-Apron High Draft System
UnitVac Power-Suction Cleaning
Roberts All-Ball-Bearing Head
Unitized Sectional Frame
AeroCreel with Latch-Type Bobbin Holders
Flexibility For Cotton And Synthetics

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

FOR THE TEXTILE INDUSTRY'S USE—

allows this unit to be assembled with either the slot or the perforations directly under the yarn sheet.

Each new static eliminator consists of a power supply and the three bar assemblies required for warping operations. All electrodes bars and head are stainless steel, all insulation polished Perspex. Current never exceeds 2 milliamperes, which though ample for ionization, provides complete safety for the operator.

This new static eliminator is manufactured by Lance Engineering Co. Ltd., England, and is distributed in this country by Lindly. (Request Item No. B-6)

Jet Black For Nylon

Neonyl Black JT has been developed by Ciba Co., New York City, in response to a new demand among customers for a jetter shade of a neutral dyeing black for nylon. Immediately available, this new black has the same dyeing and fastness properties as the well-known Neonyl Black CW, while providing jetter values.

(Request Item No. B-7)

Spherical Roller Bearings

Three major design improvements have been combined to produce the highest capacity spherical roller bearings yet developed, according to Link-Belt Co. The new line features maximum diameter and quantity of convex rollers for each bearing size; precision machined centrifugally-cast bronze retainers; and high, heavy inner race shoulders. All components are said to be in optimum balance, assuring long carefree bearing performance on the most severe installations.

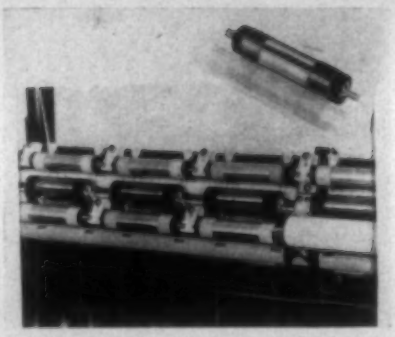
The new bearings are being introduced initially in series 22200 and 22300, in bore sizes ranging from 1.5748 to 11.0236" with dynamic load ratings up to 288,000 lbs. The bearings also will be available in pillow blocks in bore sizes ranging from $1\frac{7}{16}$ to 10". (Request Item No. B-8)

MagneTrol Renamed

Saco-Lowell textile machinery division, Easley, S. C., has announced that the MagneTrol name formerly used to describe this magnetic pressure system adapted to all roving, spinning and drafting elements has now been changed to MagneDraft. The company feels MagneDraft is a more suitable name for this system for several reasons.

The company pointed out that the name MagneDraft describes more accurately the system's function, which uses the force of magnetic attraction to produce required pressures, and does away with all auxiliary equipment. When applied for drafting, this pressure system is said to require no cap bars, saddles, stirrups, levers, springs or weights. And most important of all, according to Saco-Lowell, the MagneDraft system requires no lubrication above the roller beam.

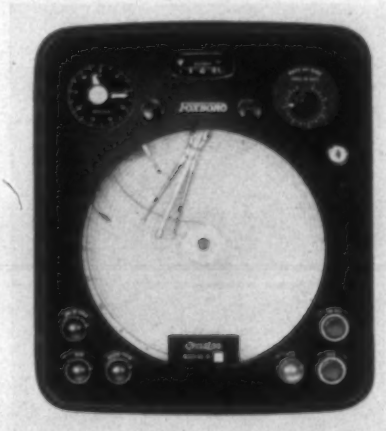
Saco-Lowell reports that its MagneDraft



The MagneDraft magnetic pressure system.

pressure system uses few component parts; offers efficient cleaning action of the clearers and eliminates the problem of worn necks on steel roll. Any drafting element can be made with the new Saco-Lowell MagneDraft. (Request Item No. B-9)

Automatic Rinse Control



Foxboro Model 40 CycleLog Controller.

An automatic rinse control, newly developed for CycleLog controllers to provide single-instrument control of major dye kettle operations, has been announced by The Foxboro Co., Foxboro, Mass.

With the addition of this feature, the rinse valve opens automatically to flush away spent dyestuffs and chemicals and maintain rinsing until the end of the cycle. Such control is said to eliminate time-consuming supervision and costly waste of rinse water. Optional on new CycleLog controllers, rinse control may also be added to instruments now in service.

According to the company, easily adjusted settings on the front of the unit permit the operator to preset an entire dyeing and rinsing schedule on a single CycleLog controller: the starting temperature, desired rate of temperature rise, dyeing temperature, holding time, rate of cooling and the rinse. The CycleLog controls the dyeing program by pneumatically operating steam, water and rinse control valves at variable time and temperature values.

Vari-colored signal lights indicate each stage of the dyeing operation, and a 12" circular chart provides a record of the cycle for quality control and future duplication of the dyeing schedule. Automatic rinse control is available in two CycleLog models; Model 40 C-HR CycleLog con-

troller for heating-holding-rinsing, and the Model 40 C-HCR for heating-holding-cooling-rinsing. (Request Item No. B-10)

Instantaneous Heaters

A new, pre-engineered, fully standardized line of Ross instantaneous heaters has been introduced by American-Standard's industrial division, Detroit, Mich. Featured is an exclusive, extra-large steam entrance area beyond the tube bundle that prevents tube damage by impingement, prolonging tube life, according to the manufacturer. Standard construction consists of rugged steel shells, cast iron bonnets, and seamless, copper alloy U-tubes. Designated Type W-100, the units are of compact, simplified design, with removable, pull-through tube bundles.

Available in 128 sizes with 2 and 4-pass arrangements, nominal tube lengths up to 10′ and shell diameters through 20″, Ross instantaneous heaters are available for most water heating requirements, including water, boosters, space heating convertors, storage towers and process work. Specially engineered units are built to handle other fluids. Bulletin 304.4K1 gives complete information about the units.
(Request Item No. B-11)

Polyethylene Softener

Chemical Products Corp., West Paterson, N. J., has announced the development of Polyethylene Emulsion PE-50, which is described as a dynamic softener, lubricant and anti-static agent for synthetic and natural fibers. The emulsion is said to be finely dispersed and to have excellent compatability. Excellent resistance to needle cutting and abrasion is said to be provided by the substance. It may be used alone or with other finishing agents and thermo-setting resins. (Request Item No. B-12)

Silicone Warp Spray

Schmidt Mfg. Co., New Bedford, Mass., and Greenville, S. C., reports widespread acceptance of its new silicone warp spray, K-15. The spray is designed to (1) strengthen and stiffen yarn, (2) bind split ends and filaments and (3) add lubrication to yarns and knots. Schmidt reports that the spray is currently in use in 74 textile mills throughout the U. S.

The product is said to have been used successfully in weaving and in tying-in by applying it from a 5½-oz. pressure spray can directly to the warp. The company reports that over 28 separate uses for the spray have been found and that demand is steadily increasing. K-15 is availabile in 1-gal. containers for application with spray guns or by other conventional sizing methods. Plans are being made to market K-15 as a sizing in 55-gal. drums.

According to the manufacturer, the substance requires no drying facilities and can be applied to the warp in front of the reed to reduce chafing or sprayed directly on the warp ends before and after tying-in. The compound is said to be non-staining and to wash completely out in warm water. As a sizing it is reportedly being used with high speed slashers for all types of yarns. (Request Item No. B-13)

Wash-And-Wear Catalyst

The Chas. S. Tanner Co. of Providence, R. I., and Greenville, S. C., chemical manufacturer, has several patents pending on a new catalyst known as Catalyst TT which,

FOR THE TEXTILE INDUSTRY'S USE—

when used with urea formaldehyde paste resin, methylated urea formaldehyde resin, dimethylol ethylene urea, methylated melamine formaldehyde, and trilazone, increases the tear and tensile strength on cotton fabrics 15 to 40%. It is also claimed to have better non-yellowing properties.

Due to the nature of Catalyst TT, a reasonable over-curing will not cause tendering. This property gives maximum flexibility in processing resin treated goods.

The catalyst is said to have another unique property in that the best results on tensile and tear are obtained at the higher concentrations which is not the case with conventional catalysts. From exhaustive tests it is claimed that there is also less odor development.

This new product from the Tanner laboratories is now in full operation in many plants in the wash-and-wear fabric field.

(Request Item No. B-14)

D. C. Motor

The Hoover Electric Co., Columbus, Ohio, has announced the availability of a new 28-volt d.c. motor for a wide range of applications. The motor delivers 2 h.p. at 3,000 r.p.m. The mounting flange is a modified AND-20001 configuration. This motor is of the open frame construction and features integral cooling fan for efficient cooling. Hoover standardized flame quench rings, to provide complete explosion proof feature under adverse operating conditions, are available.

The foot mounting can be changed to accommodate end mounting or pad mounting to meet specific customer requirements. Other output shafts are available for keyed, splined or flats. Higher output speeds are available by removing the reduction gear box. Other voltages are available upon request. Modified versions of this motor are available from 1 to 15 h.p. Previous applications include hydraulic pump drives and pneumatic compressor drives. It has also been used to operate fork lift trucks and materials handling equipment.

Said to be a unique feature of this motor is the Hoover patented brush holder which insures even brush pressure over the full wear range of the brush and thus produces an even power output motor.

(Request Item No. B-15)

Electric Safety Lock

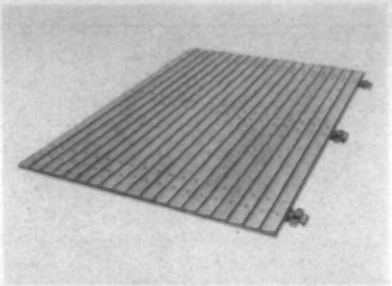
A new electric safety lock which is said to have wide application is now available from Lindly & Co., Mineola, N. Y. This new lock, for which patent application has been made, is said to be a strong, compact package. The strength is maintained by two compatible electric fields generated when the current is switched on. In other words, it works on the principal of a split electric transformer. As long as electricity activates the two fields, the lock is virtually unbreakable; when the current is cut and the magnetic fields broken, the two halves of the lock separate to permit motion.

The lock is said to have many applications including that of an operator guard on machinery and as a door lock for safety and security.

The new lock is manufactured by Lance Engineeering Co. Ltd., England, and is distributed in the U. S. by Lindly, producer of diversified devices and systems in photoelectric, infrared, optical, electro-mechanical and electronic fields.

(Request Item No. B-16)

Slat Apron



Robert A. Main & Sons reports its new slat-type apron will outlast any type of existing apron now being used in scouring departments.

Robert A. Main & Sons, Paramus, N. J., is offering a slat-type apron for use in scouring trains in woolen mills which is said to outlast existing type aprons now being used in scouring departments.

This apron is made with slats mounted on heat-treated forged Ram chain, and slats are constructed of synthetic material that will not warp under heat or wet acid conditions. In addition, the slats are made of material that is very smooth, and wool fibers will not cling to the slats, the company reports. The apron is being offered in a variety of lengths or widths and is said to outwear cast chain type aprons using wood slats. In addition to its claimed advantages in scouring trains, this new slat apron is said to be good for other conditions where wet operations or acid are prevalent. (Request Item No. B-17)

Polymer Wood Tank Linings

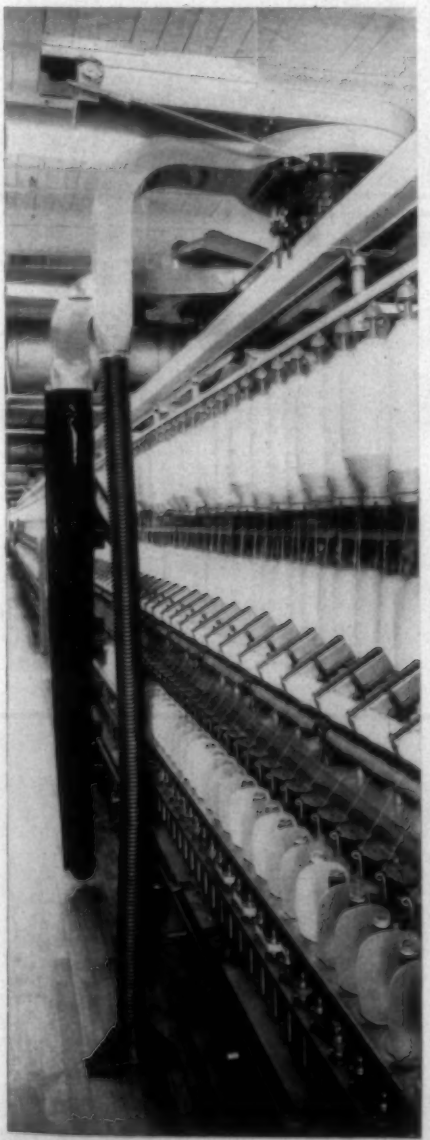
Wennagel & Co., manufacturer of wood tanks, announces the introduction of a new type of lining made of two polymers: polyvinyl chloride for use in handling most all inorganic acids and bases, bleach and many organic solvents; and polyethylene linings for organic solvents and inorganic solutions.

Called Polycel tanks, the wood tanks are said to be less costly for both labor and material than methods formerly used, and much less costly than rubber-lined steel or alloy metal tanks. Polymer linings are heat sealed into a bag liner made to fit the inside of the tank. These can be furnished for round or rectangular tanks, new, or already in use. They are custom-made for particular needs and conditions.

The most convenient method of installation is to apply the liner loose in the tank and fasten it to the wood around the top or carry the liner over the top and fasten outside. Where necessary, the lining can be cemented to the tank. Fittings are said to

Picks lint up and takes it away!

TRAVELING VACUUM CLEANER



Travels
with Frame Cleaner
introducing
floor level suction
adjacent to underframe
flexible sleeves.

Frame Cleaner puts
lint into spinner's
alley. Vacuum Cleaner
removes it.

Once a trip,
collected lint dis-
charged into vacuum
receptacle . . .

The most important
step forward
in the cleaning art
since the introduction
of extended flexible
sleeves.

Parks-Cramer Company

FITCHBURG, MASS. CHARLOTTE, N. C. ATLANTA, GA.

411

be easily connected to the tank with the liner in place, much in the same way as regular wood tank fittings. In some cases it is possible to use plain steel or galvanized fittings with a sleeve made of the tank lining running through the fitting and ending with a flange for outside connection. Where the tank is subjected to abuse that might damage the lining, a separate protective lining of boards, plywood or rigid PVC can be added to the inside at low cost. A "Handbook of Wood Tanks" with data on tests made on these linings, as well as literature describing Polycel Tanks, is available from the company.

(Request Item No. B-18)

Dacron Dyeing Assist

Dacrol 506, new Dacron dyeing assistant recently introduced by Eastern Color & Chemical Co., Providence, R. I., is described as greatly superior in evenness and non-spotty dyeing to others in the non-toxic group. Dacrol 506 is said to be readily dispersible in water and completely non-toxic, having no volatiles to be emanated in any form.

Other Eastern Color products in the same area of interest are Dacrol D, a conventional assistant, and Dacrol MS, a non-toxic assistant whose performance has reportedly proven to be outstanding in a variety of applications.

(Request Item No. B-19)

Fade-Ometer

A new Fade-Ometer, Model FDA-RC, has been introduced by the Atlas Electric Devices Co., Chicago, Ill. This Fade-Ometer is said to be equipped with an electrically operated atomizer and cycle meter permitting it to be operated either under conditions simulating the cycling effect and high humidity conditions encountered in the daylight exposure method or under conditions which produce good correlation with the sunlight exposure method where the samples are exposed to sunlight between 9 a. m. and 3 p. m. Fade-Ometers now in use can be economically converted into the Model FDA-RC by the addition of the new features.

(Request Item No. B-20)

New Filament Yarn By Dow

The Dow Chemical Co. is now marketing small quantities of its recently developed vinylidene chloride copolymer filament yarn Rovana, which had formerly carried the experimental designation Q-957.

The monofilament yarn is a narrow ribbon of light film in continuous form. It is available in 300, 400 and 550 deniers. Rovana is a flat film tape of uniform thickness and is sold in a range of ten colors, including natural color.

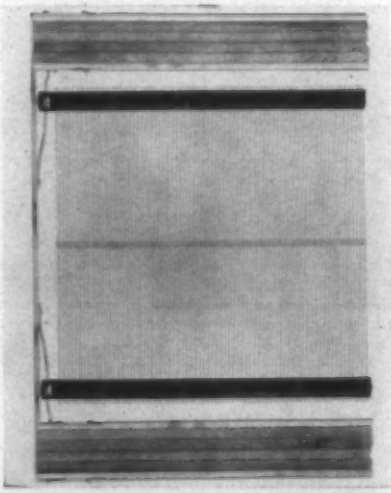
A new application for Rovana is in the form of 100% wall covering fabrics woven from the fiber and embossed for decorative effects. The fabrics were applied using conventional wall covering procedures in three rooms of the National Association of Home Builders Research Institute 1958 research house at South Bend, Ind.

Rovana, newest Dow trademark in the textile field, has been woven into lightweight fabrics, alone and in blends, having good cover and relatively high tear strength. The thermoplastic nature of the fiber permits embossing, shaping and calendering. Durability, dimensional stability and resistance to the effects of weather, sunlight and chemicals are among the other features claimed for the new product.

Rovana fiber has been under research and development for more than five years at Dow. The present fiber emerged about two years ago and intensive product development has highlighted recent Dow activity in behalf of the fiber.

(Request Item No. B-21)

Laminated Harness Frame



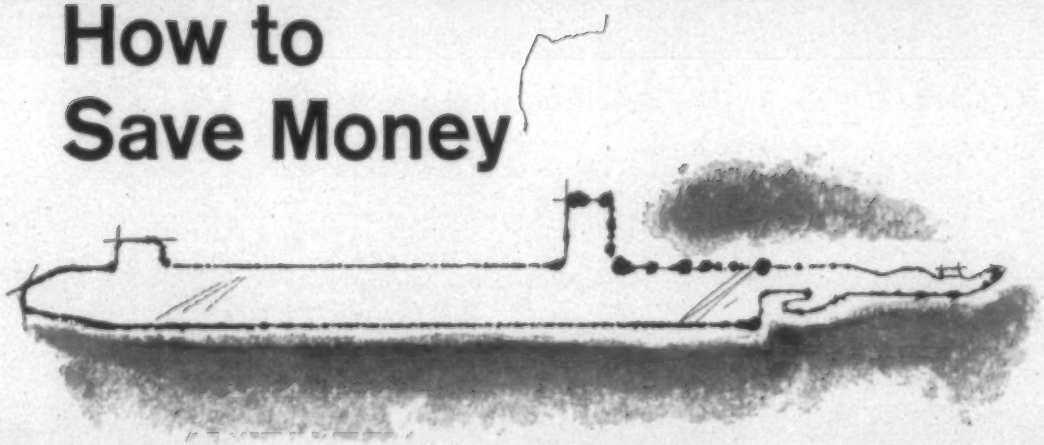
The newest member of the Stehedco Duraweld family is this premium grade laminated harness frame.

Steel Heddle Mfg. Co. of Philadelphia, Pa., and Greenville, S. C., has introduced a premium grade laminated harness frame that is said to guarantee greater stability and longer trouble-free life. It is produced with permanently laminated strips of carefully selected high-quality wood. By blending strips of varied grain structures and weights, weak spots and splintering are said to be practically eliminated.

Each stick when it is initially cut has less distortion, with practically no bow on the edge or flat, and there is less tendency to distort during use. Excessive wear on heddles or adjacent frame is said to be eliminated, and greater holding power for hardware provided. The Duraweld harness frame is said to offer economy of operation never before known.

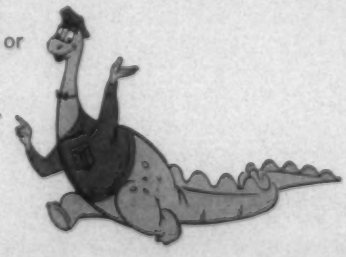
(Request Item No. B-22)

Needles... Oil... and How to Save Money



A stitch in time saves nine—but in time, knitting needles can rust—and rust wastes money. Moral: eliminate rust and other costly deposits with Sinclair Crystoil. This very light-colored oil works to give you more first-quality knit-wear—and a more profitable operation. Switch to Crystoil now. Next time management asks how you've cut costs, tell them you've changed to Sinclair—and show them the results.

Find out more about CRYSTOIL. Call your nearest Sinclair Representative or write Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. There's no obligation.



SINCLAIR
Crystoil Needle Oils

For the Mill Bookshelf

D.C. Motor

A 2-page information sheet has been prepared by the Hoover Electric Co., Columbus, Ohio, describing its new 28-volt d.c. motor which produces 2.0 h.p. at 3,000 r.p.m. It is of open frame construction and features an integral cooling fan and a modified AND-2001 mounting pad. The publication also features a performance chart for the unit. It illustrates outline and mounting dimensions. (Request Item No. B-23)

Sav-Yarn Twister

Collins Bros. Machine Co., Pawtucket, R. I., has issued a 4-page, 2-color folder describing its Sav-Yarn twister with Airestop spindle action. The Sav-Yarn twister is used for inserting twist in singles yarn and up to 14 ply on all types of yarns, including glass and paper. It is said to be excellent for processing textured and bulk yarns. The company reports that the Sav-Yarn twister with Airestop spindle action will produce packages of completely knotless yarn from 6 oz. to 12 lb. The Airestop spindle action is said to instantaneously stop the individual spindle blade and package whenever an end breaks or a run-out occurs. The bulletin describes fully the operation of the Airestop spindle action and the front roll action of the twister.

(Request Item No. B-24)

Roving Frame Cleaner

A 4-page, 2-color bulletin describing its Type CTGV roving frame and room cleaner has been published by Parks-Cramer Co., Fitchburg, Mass. The unit is said to deliver a number of accurately controlled air currents with high velocities for front frame, under carriage and ceiling areas, and gentle velocities for sliver areas. It also features automatic dampering of high velocity air during doffing, creeling and end piecing. The CTGV is Parks-Cramer's basic single-carriage, single-motor, single-fan unit, with air distribution to suit the requirements of the roving process. It operates on standard Parks-Cramer track. The bulletin lists full advantages of the unit.

(Request Item No. B-25)

Battery Powered Hand Trucks

Complete specifications and a full description of operating characteristics and advantages of four high-lift, battery-powered hand trucks are contained in a new 6-page, color brochure available from industrial truck division, Clark Equipment Co., Battle Creek, Mich.

Machines described are Powrworker Stackers of 1,500, 2,000, 2,500 and 3,000 lbs. capacity. Charts indicate lifting heights and lift speeds of all models. Drawings show turning radius and dimensions. Photographs illustrate such features as nested, roller-type upright, demountable drive wheel, double acting safety brakes, and fingertip controls. (Request Item No. B-26)

Producing Repair Parts

A new 24-page booklet entitled "How to Make Your Own Machine and Repair Parts Quicker and Easier" has been published by La Salle Steel Co., Hammond, Ind. The booklet is designed especially to help solve maintenance and repair parts problems and is available on request, free of charge. It covers care and trouble-shooting of machines and equipment, machining and welding techniques and contains drill hole tolerances and a grinding limits chart.

Many types of parts are almost universal in their use throughout industry and the booklet pictures a number of these with descriptive case histories which discuss the benefits the user has obtained by using Stressproof, a high strength all-purpose steel bar. It also discusses pertinent machining problems and time and labor costs saved by using this material.

(Request Item No. B-27)

Variable Speed Drives

A new 8-page, 2-color bulletin, G-5812, has been published describing the complete line of Reeves variable-speed drives which are said to provide precise, infinitely adjustable output speeds from a constant r.p.m. motor source operating from standard in-put a.c. circuits. The units are manufactured by Reliance Electric & Engineering Co., Cleveland, Ohio.

The bulletin includes mechanical construction features, condensed drive specifications, available speed variations and accessories for the Reeves Vari-Speed Motodrive, motor pulley and variable-speed transmission. (Request Item No. B-28)

Latex Coating

A technical bulletin on Dow Latex 586, an improved polystrene latex for various plastics and coatings uses, has been published by The Dow Chemical Co., Midland, Mich. The bulletin includes detailed information on the physical properties of Dow Latex 586, as well as technical information on various applications. Dow Latex 586 is designed to harden soft film-forming latexes to bond fibers and pigments.

(Request Item No. B-29)

Creslan Dyeing

A new booklet on the dyeing of Creslan, which deals with procedures for applying various classes of dyes to this new acrylic fiber, has been published by Allied Chemical's National Aniline Division, New York City.

The 51-page brochure, said to be the first of its kind, shows the fastness properties of National dyes when applied to Creslan, including results of tests conducted for washing, acid and alkaline perspiration, rubbing and light fastness.

Creslan is said to be characterized by excellent textile properties and high affinity for dyestuffs. Creslan fiber is used in knitwear such as sweaters, jumpers, dresses, suits, headwear, socks and underwear. It's also suitable for knit blankets and carpets and for industrial applications. The new booklet is designated Technical Service Circular 18. (Request Item No. B-30)

Instantaneous Heaters

Illustrated Bulletin 304.4K1 presenting new Ross instantaneous heaters with exclusive, extra-large steam inlet area, has been released by American-Standard, industrial division, Detroit, Mich. The principal features described include unique location of steam inlet, beyond the tube bundle to prolong tube life; rugged steel shell construction; compact, simplified design; seamless, copper alloy U-tubes; and removable, pull-through tube bundles. Seventeen pages of selection tables, charts and piping diagrams are provided to assist plant engineers in selecting the proper units to meet various requirements. (Request Item No. B-31)

Recording Spectrophotometers

Performance and versatility features of the Beckman DK double-beam ratio recording spectrophotometers are illustrated in a new brochure, Bulletin 735, published by Beckman Instruments Inc., Fullerton, Calif.

The 12-page brochure also lists specifications, operating convenience features, applications data and accessories for the Beckman DK-1 and DK-2 spectrophotometers. (Request Item No. B-32)

Fiber Research

Two literature lists on fiber research, one on electron microscope work and the other on X-ray diffraction investigations, are available free of charge from the instruments division, Philips Electronics Inc., Mount Vernon, N. Y. The tabulation of electron microscope papers includes 79 articles which appeared in domestic and foreign publications. Six textbooks and reference books are listed also. A total of 58 articles are tabulated in the X-ray diffraction list. Both bibliographies give the name of publication, volume number, page numbers and year of publication. When copies of the articles are unavailable in local libraries, photostatic copies will be supplied by the New York Library at nominal cost.

Serving The Textile Industry

Universal Winding Receives More Orders For Loom Winders

Universal Winding Co. has disclosed the names of a number of companies that have ordered Unifil loom winders during the past few months: Bemis Brothers Bag Co.; Bruck Mills Ltd. (Canada); Cadillac Textiles Inc.; Canadian Celanese Ltd.; Exposition Cotton Mills Co.; Glen Raven Silk Mills; Jaunty Fabrics Corp.; Kalco Weaving Corp.; Marion Mfg. Co.; Paxon Fabrics Corp.; Riverside Mills; William Skinner & Sons; Strasburg Textile Mills.

In addition to this list, the company reports that it has received orders from 13 other companies whose names cannot be disclosed at this time. Universal claims that it has also received substantial repeat orders from companies which had previously purchased Unifil loom winders and that, based on present orders, Unifil loom winders will be running in 78 plants of 52 companies by the end of 1959.

Goodrich Chemical Co. Erects Textile Lab

B. F. Goodrich Chemical Co., Cleveland, Ohio, has completed the installation of a new textile laboratory in a building adjacent to its headquarters. The laboratory contains 13,000 square feet and is equipped with all types of textile processing equipment for testing and making yarns from its dinitrile fiber, Darvan. The unit is designed to provide technical service to mills in new fabric construction, to handle Darvan quality control and to provide long-range development work.

Rohm & Haas Co. Reports Higher Sales, Lower Income

Rohm & Haas, Philadelphia, Pa., textile chemical firm, reports a rise in sales but a drop in profits for 1958 as compared with 1957. Sales for 1958 totalled $176,589,000 with net income of $14,535,000 or $13.05 per share of common stock. This compares with sales of $174,053,000 and profits of $15,626,000 or $14.04 a share in 1957.

General Latex Corp. Opens Charlotte Plant

General Latex & Chemical Corp., Cambridge, Mass., has announced the opening of a large new compounding plant—the company's sixth—at 2321 N. Davidson St., Charlotte. In full operation since November, the new plant has a fully integrated staff, research and development laboratories and complete facilities for compounding rubber latices for the textile industry. In addition, the facility will provide customers in the area with the complete line of General Latex products, including Harrisons & Crosfield Malayan Latex and Goodyear Pliolite Latices.

Key personnel includes District Sales Manager Jack Hobbs; Sales Representative Ernest Horton; and Chief Control Chemist Everett Eldridge. The plant covers an area of 25,000 square feet. Ample parking space is provided.

Roberts Co. Shows Loss In 1958

Roberts Co., textile spinning machinery manufacturer of Sanford, N. C., has reported net sales of $3,166,339 for the fiscal year ended November 30, 1958, as compared with $4,101,017 for 1957, a decline of 23%. For the past ten years the firm's sales rose from year to year by at least 22%. Net loss after tax refund credits in 1958 was $319,529 compared with net income in 1957 of $124,019 and net income of $214,529 in 1956.

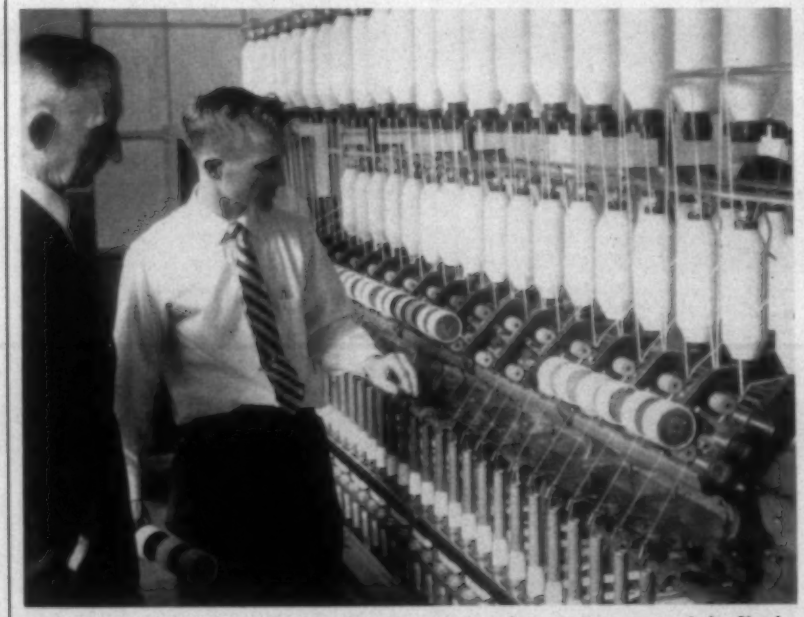
At the end of fiscal 1958, current assets were $1,809,018 and current liabilities amounted to $1,066,567 for a net working capital of $742,451, a ratio of 1.7 to 1. At November 30, 1957, current assets were $1,805,927 and current liabilities came to $674,382 for a net working capital of $1,131,545, a ratio of 2.68 to 1.

In discussing the firm's activities in the foreign field, the company stated that earnings on sales of its European subsidiary (Switzerland) have just begun to cover expenses. Roberts' Mexican subsidiary started to function during the past month and has already written its first large contract for 16 fully-equipped Arrow M-1 machines.

Ideal Industries Announces Trade-In Plan For Drawing

Ideal Industries Inc., Bessemer City, N. C., has announced a new trade-in plan designed to offer mills substantial reductions in cost of new or rebuilt drawing frames. Under the plan the company takes in old drawing of any kind in trade for new or factory rebuilt drawing which is said to be "equal in appearance, performance, production, efficiency and quality to any completely new drawing on the market." Rebuilt frames are delivered to the mill ready to run, eliminating downtime and inconvenience of rebuilding in the mill.

Every working part above the can table is brand new in Ideal's rebuilt frame. Rebuilt frames may be had in either 16 or 18" gauge with can sizes up through 16". The frames have four deliveries per head and Feathertouch drafting systems. The parts used from old frames are the beam, stands, gear covers, gearing mounting brackets and gear covers. The can table



A NEW MODERN SPINNING FRAME was added to the spinning room of the North Carolina Vocational Textile School at Belmont recently when the F. A. Young Machine Co. of Gastonia cut down an old frame from 156 spindles to 72 spindles and installed its new drafting system and suspension type umbrella creel. The frame is also equipped with Parks-Cramer's Spin-Sa-Vac vacuum cleaning. Shown here looking the new frame over are Chris E. Folk, principal of the school, and Robert Jackson, head of the yarn manufacturing department.

"As a G. I. he wrote love letters . . . now that he's a DILLARD salesman, I get paper samples!"

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is the only moving part retained in rebuilding old frames.

Other features of Ideal's new or rebuilt drawing include vacuumatic cleaning; individual motors; individual drives; electromagnetic clutch; electric knock-off actions; ball bearing spacing sections; and no shafting, flat pulleys or belts.

Standard Oil Co. Of Ohio Building Acrylonitrile Plant

The Standard Oil Co. (Ohio) will build a new plant at Lima, Ohio, for the manufacture of acrylonitrile, based on a process developed in the Sohio research center in Cleveland. This is another step in Sohio's continuing program of expansion into petrochemicals. Ground-breaking is scheduled for the early Spring of 1959, according to the announcement by President Charles E. Spahr. The multi-million dollar plant, scheduled for completion early in 1960, is expected to employ about 120 people.

The new facility will make Sohio a major producer of acrylonitrile, a principal raw material for fibers used in wool-like fabrics for sweaters, suiting, carpeting and synthetic furs.

Onyx Oil & Chemical Co. Merges Sales Departments

The textile, paper and industrial divisions of the Onyx Oil & Chemical Co., Jersey City, N. J., have merged sales departments, according to F. O. Robitschek, president. Irving Gaines, formerly industrial division sales manager, has been promoted to general sales manager. Philip E. MacLean, formerly textile and paper division sales manager, has been promoted to sales manager. This re-organization will result in more efficient utilization of technical service personnel and field sales force, the company reports.

American Viscose Corp. Earnings Down in 1958

American Viscose Corp. reports that net earnings on its operations (excluding the Chemstrand dividend) and its equity in the earnings of The Chemstrand Corp. and Ketchikan Pulp Co. amounted to $2.83 per share in 1958 compared with $3.60 in 1957. At American Viscose, earnings for 1958 were $6.9 million or $1.36 per share. These earnings include the initial dividend from Chemstrand equal to $.45 per share. The balance of $.91 per share consists of earnings of $1.12 from operations reduced by nonrecurring expenses in closing the Roanoke plant equal to $.21 per share. The earnings from operations of $1.04 per share in the last half of 1958 compared with only $.08 in the first half reflect the improvement in the corporation's business since the middle of the year. Sales were about 5% lower—$217 million in 1958 compared with $227.6 million in 1957.

In commenting on operations, Dr. Frank H. Reichel, chairman, and Gerald S. Tompkins, president, said that there was a great improvement in the business of American Viscose during the last six months. The sales of fibers for use in textiles, tires and in automobiles were severely depressed during the early part of the year due to the decline in business activity, and more important, to the drastic reduction in inventories at all levels of business. The corporation's sales in the last half of 1958 were 25% greater than in the first half—and 10% higher than in the corresponding period of 1957. The sales of viscose and acetate yarns and staple should continue in 1959 at satisfactory levels as a result of the anticipated sale of more automobiles and the expected increase in sales of home furnishings.

American Cyanamid Building New Production Facility

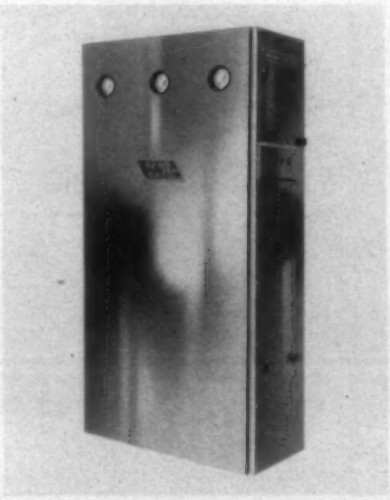
Ground was broken recently at Bound Brook, N. J., by American Cyanamid Co. for a multi-million dollar anthraquinone manufacturing facility which will double Cyanamid's annual production of this chemical. Anthraquinone is an intermediate chemical used primarily in the manufacture of dyes. The new unit, a part of the Bound Brook plant, will be operated by the company's organic chemicals division. The Bound Brook location includes more than 100 buildings that are spread over nearly 600 acres. Among its chief products are dyes, intermediates and textile chemicals.

A. E. Staley Erecting New Research Center

Construction has begun on a new 108,000-square-foot research center at the A. E. Staley Mfg. Co., Decatur, Ill. The structure is expected to be completed in mid-1960. A. E. Staley Jr., board chairman, said the project "is an essential part of the long-range research expansion program launched three years ago to assure our company profitable diversification and sustained growth."

The new center will provide more laboratory space and improved scientific facilities required for the company's expanding research effort. Dr. Thomas L. Gresham, Staley research vice-president and technical director, said the center will consist of three wings, a four-story laboratory wing, a three-story office and library wing, and a two-story auditorium and cafeteria wing. The design permits future expansion.

Cocker Acquires Nemo Jet Cooker



Nemo Jet Cooker.

The Cocker Machine & Foundry Co. of Gastonia, N. C., has acquired exclusive manufacturing and sales rights on the Nemo Jet Cooker developed by Nemo Industries Inc., Atlanta, Ga. The Nemo cooker is said to eliminate the cooking of size in large batches, and the resultant variation in viscosity and film-forming properties. The cold mix is made in the usual way and piped to the Jet Cooker where just the amount needed is cooked instantly. This eliminates dumping of unused cooked size, lumps and hard size, and the need for controls for cooking and storage kettles.

Installation of the unit is said to be simple and steam requirements are less than with methods generally used. An important side advantage is the great reduction in stream pollution, which is becoming increasingly important because of the new laws being passed by many communities.

U. S. Patent Awarded On Lap Control System

The U. S. Patent Office has awarded patent No. 2,871,519 to Livingston & Haven Inc. of Charleston, S. C., and Shuford Mills, Hickory, N. C., for the pneumatic control system for the calender section of pickers known in the industry as the Long pneumatic lap control system. The system is already in use in some 85 U. S. mills with

227 installations. It was developed by Alden C. Flint, vice-president of Livingston & Haven, and John R. Long, research engineer of Shuford Mills, and is said to be another step toward automation.

Patents are pending on the fluted calender controls. Foreign patents on the complete system are also being sought. Foreign sales are being handled by Platt Bros. Sales Ltd. of Oldham, England. The company also has U. S. and foreign patents pending on other pneumatic systems for other phases of the textile industry.

Hall & Co. Changes Hands

John B. White and Robert L. White of Charlotte have acquired a controlling interest in Hall & Co., textile mill supply firm, according to Fred N. Hall, retiring president. Hall established the firm in 1945. New officers are John White, president and treasurer; Margaret W. O'Connell, vice-president; Robert L. White, executive vice-president and general manager; and Floyd A. Alley, secretary and assistant treasurer. The new officials announced that they would continue to operate Hall & Co. as a wholesale distributing firm.

McLean Trucking Co. Reports Earnings

For the calendar period 1958, McLean Trucking Co. of Winston-Salem, N. C., reported an operating revenue of $31.7 million. Earnings totalled $1.9 million before income taxes and $829,795 after taxes, or about 65 cents a share. During the year McLean made application to the Interstate Commerce Commission for the purchase of Hayes Freight Lines of Springfield, Ill.

The Duplan Corp. To Increase Stretch Yarn Capacity

The Duplan Corp. has placed an order with Universal Winding Co. for sufficient equipment to double the stretch yarn capacity of its Cleveland, Tenn., plant. The plant, one of three large throwing mills operated by the corporation, will produce Superloft continuous process stretch yarns exclusively.

A spokesman for the corporation said: "The investment, amounting to about $400,000, is to enable Duplan to keep pace with the growing demand for stretch yarns and to maintain Duplan's position as the largest producer of these yarns. This expenditure will bring to $3,500,000 the funds invested by Duplan since the Spring of 1955 in modern equipment for the production of stretch and other textured synthetic yarns."

Fiber Industries Inc. Lets Building Contract

Fiber Industries Inc. has selected the Daniel Construction Co., Greenville, S. C., to build its 40-million-pound-a-year polyester fiber plant at Shelby, N. C. Ground was to be broken on January 26.

Fiber Industries is the company formed last year by Celanese Corp. of America and Imperial Chemical Industries of Great Britain to produce and market Teron, a polyester fiber. The announcement of the letting of the contract was made by James H. Black, president of the new corporation, at a meeting of the Shelby Junior Chamber of Commerce. Black spoke to the group about good community-business relations.

Martin To Represent Schutte & Koerting Co.

Joel E. Martin & Co., Charlotte, has been appointed representative for the Schutte & Koerting Co. of Cornwells Heights, Pa. Schutte & Koerting are manufacturers of steam and water jet equipment, valves, heat transfer machinery, oil firing units, rotary gear pumps and flow meters. Martin is located at 618 East Morehead St. The telephone number is FR 6-8294.

Earnings Down At Dow Chemical

The Dow Chemical Co. has reported sales of $341,881,379 and net income totaling $28,028,844 or $1.07 a share for the six months ended November 30, 1958. For the same period in 1957, sales totaled $337,203,122 and net income $28,957,241 or $1.12 per share.

Earnings before taxes for the six months were $54,384,743 compared with $57,178,067 reported in 1957. U. S. and foreign income taxes were $26,355,899 as against $28,220,826. Depreciation and amortization were $41,281,000 and $42,090,000 in the respective periods. Shares outstanding were 26,129,105 compared with 25,807,844.

For the three months ended November 30, the company reported sales of $184,672,020 and net income of $16,853,114 or 64 cents per share. For the same period of 1957, sales were $170,900,855 and net income $14,819,330 or 57 cents per share. Earnings before taxes were $32,864,561 against $28,600,780 in 1957.

Universal Winding Co. Announces Stock Split

The board of directors of Universal Winding Co., Providence, R. I., has voted to split the common stock of the company two-for-one declaring a 100% stock dividend on the common stock, Robert Leeson, president, announced recently. The split will follow the retiring of the firm's presently outstanding preferred stock which is expected to be completed by April 30. The call price is $17 per share plus accrued dividends. The market price has recently been at or over $40 per share. Papers are in preparation making application for listing the common stock on the American Stock Exchange, Leeson stated. It is hoped that the listing can be accomplished in the near future, he added. The 100% stock dividend and the listing of the stock on the American Stock Exchange are expected to result in broader distribution of the common stock, according to Leeson.

textile bulletin

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Better Management through Better Marketing

By RUDOLPH M. ASHNER*

FOR many years, the textile industry concentrated on improvements within its manufacturing phases. As a result: (1) The consumer is able to purchase better fabrics at considerably less than before, and in unlimited quantities. (2) Many textile mills concentrated on producing a confined range of products at high efficiency sacrificing their flexibility to change with market conditions.

Too often, manufacturing requirements dictate company policy to a point at which the governing factor is maintaining a mill operation in order to move those goods which form the bulk of its production. In some instances this policy will even condone taking business away from a competitor at a loss. Under such conditions the basic principles of business have been corrupted.

Maximize Profits

The single objective of every company should be to MAXIMIZE ITS PROFITS AND SERVICES. Too often the selling organization is forced to concentrate on bringing products to the consumer regardless of market demands, and with little concern for providing it in the most acceptable time and form.

Markets do not exist for the asking. They must be sought after, investigated, analyzed, appraised and serviced. Too many people feel that *production* is the key to a solution of all textile problems. Too many products have been designed, made, and produced by the mill for its own sake: and when it came to selling this output, the end results were unhealthy inventories and liquidation problems causing tremendous losses. We all know that this isn't a ficticious situation; it occurs regularly and will continue to occur until our own thinking changes. Too many people go into the textile industry because they know how to *make* a product, and too few because they know how to *sell* a product. To quote David F. Austin, executive vice-president of United States Steel, who has said repeatedly, "IT IS MUCH MORE IMPORTANT FOR A BUSINESS TO OWN A MARKET THAN A MILL."

Our definition of good marketing is the art of turning goods or services into accounts receivable in the most profitable manner. What often happens in trying to achieve this goal is that insufficient use has been made of all the management tools available for carrying out this task. For example, at one time, the heroes of industry were production men—those whose mills could produce goods faster, better and more economically. We have entered now into a new era—one in which today's hero and tomorrow's leader is a new breed of textile man—one who can sell faster, better and more economically. These men are so radically improved over the old-fashioned "salesman" concept that a new description has been applied to them. They are called marketing men. Progressive firms everywhere are recognizing the need for something more than just a selling organization to bring their products to the consumer. They are understanding the growing need for imagination and persistence to capture a market and to develop sales which will produce a profit for the company.

It is inevitable that marketing should become the controlling factor as to what a mill should make to sell at an acceptable profit. Marketing must first determine the market available for company products; how this market may best be reached through the sales and service efforts,

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"Too many people feel that production is the key to a solution of all textile problems. Too many products have been designed, made and produced by the mill for its own sake; and when it came to selling this output, the end results were unhealthy inventories and liquidation problems causing tremendous losses."

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promotion and advertising; and then gear the mill's productive capacity to what is needed. These decisions are reached through the combined labors of an organized marketing function. The integration of all company activities to achieve this optimum state requires creativity, originality, boldness and *facts;* it also requires the talents of a trained marketing executive who is qualified through experience and skill to meet the challenge of competition and shifting economic trends. A change in management thinking is needed in this new era of textile marketing. There is no room for conformity; the old methods of doing business are no longer the best ways, and similarity is not an appeal that excites a buyer.

Modern Marketing

Modern marketing must include the following: (1) an individually tailored program containing both long and short range objectives; (2) a functional organization to carry out the marketing plan, using every marketing tool effectively, economically and propitiously; and (3) an integration with the manufacturing and administrative components of the organization.

It is the task of a company's chief executive to maintain a balance among the marketing, production and administrative services with emphasis on the relationship between the staff divisions of marketing and production. From a management point of view, strong co-operation between these staff departments is essential. At the same time, an executive committee consisting of the president and the marketing, manufacturing and administrative vice-presidents would reach an agreement on marketing policies and co-ordinate them with the other staff and line functions of the company.

The successful correlation of staff and line functions in a marketing organization is probably the most necessary single factor for its over-all efficiency. It is the analogue organization of the normal production group, where the staff does the planning, including the desired production schedules, quality and processing standards, etc. Their instructions form a basic manufacturing guide for line production executives to follow. These men are thereby relieved of every responsibility that would prevent them from concentrating on the activities with which they are directly concerned.

In marketing, the staff (often called "Merchandising") must do the planning and control of sales, while the line forces are doing the actual selling. We are dealing here with two types of personalities; sales people, who are the wishful thinkers and doers, balanced by the "fact" people doing market research, sales controls, aids and stimulants. The blending of this total effort into the greater marketing plan involving all divisions of the company will bring marketing into both the "planning" and the "doing" areas of a company. The staff functions would cover sales analysis and control, market research, promotion, etc., while the line personnel would adhere strictly to their position of selling and reporting.

Market Research

Market research is the continuous investigation of individual markets and may be divided into two areas; internal and external. Internal market research takes under consideration all past sales records in such categories as fabric, style and customer, in projecting sales expectations for the future. If such a running account of a company's background has not been kept, then it should be started at once. Historical recall may not be the most valuable activity of market research, but it is definitely one of its major objectives.

External research involves the organized collection of information from a variety of sources as to what your customers are using, and what portion of the total market you are getting. It is field research in its strictest sense, providing a knowledge of what takes place in each market; the habits, prejudices, and predilections of the customer; the prospects, competition, channels of distribution, spheres of influence, etc. It helps to create a company picture as viewed by their customers in terms of product, services, reputation and management, compared to their competitors.

Market research can also assist mill operation by establishing acceptable quality standards. It would be pointless to penalize a mill into producing quality beyond what is actually needed. Although quality standards are sometimes dictated by competitive products, a competent marketing organization should be fully capable of distributing lower quality materials to customers with less critical uses.

Market research is particularly essential in setting up realistic forecasts, production schedules, advertising and promotion needs, sales quotas, etc. It may also advise mill management with regard to its purchasing. Market research, in addition, is also the tool for obtaining information on trends, particularly in connection with products based on changing living standards, new fibers and materials, and general economic fluctuations.

The value of market research in this respect may be found in a recent statement by W. E. Clark, vice-president in charge of the textile division of the United States Rubber Co., in which he said, "I . . . observe that sales figures for 1957 will show 57% of our total sales will be in . . . items which were not produced by our textile division five years ago . . . I must conclude that a marketing research department is a much needed necessity and not a luxury . . ."

Product Development

The product development department is responsible for formulating and recommending plans for adding, changing or discontinuing product lines. It prepares product specifications and manufacturing information to guide the mill in carrying out its experimental runs. Aiding them are the salesmen and the market research department, who, with their fingers on the pulse of customers and consumer reaction, can be instrumental in suggesting new products.

It is often preferable to have an independent group responsible for product development so that it can be free from the pressure of making an immediate profit. Direction for the group should come from the marketing manager, who should certainly be the one best able to forecast the potential of a new product. For example, a new

construction was introduced by a leading textile company. In the presentation, the public was notified that this fabric

. . . represented a new method of blending and spinning of viscose, rayon/acetate and Orlon.

. . . had greatly improved loft, sharp crease-retention, and excellent wrinkle-resistance.

. . . provided the quality, look and behavior at the popular price range.

. . . would be sold to the men's and boys' wear trade, the fastest growing segment of the apparel industry.

The important fact here is that management set out to make a specific fabric suited to the needs of a growing market, illustrating the combined power of market research and product development. In addition, the promotion used by the firms showed the emphasis on advertising, which shall next be considered.

Advertising And Sales Promotion

This function frequently is insufficiently integrated with other market activities to insure the best possible return. Furthermore, most textile mills do not understand what it means when talk revolves about advertising. They think in terms of national programs in which the identification of the mill is normally lost in the product that is being featured. In discussing advertising and promotion, we will refer only to selling aids for the direct customers of the mill. Such advertising and promotion is rarely expensive. The problem is to find out who the customers are and what help these customers need to sell *their* customers. Programs should be worked out well in advance, in order to be of maximum benefit to the sales staff. One important mill (Dan River) works a year ahead on its advertising and promotion programs.

To quote F. W. Mansfield, the marketing director of Sylvania Electric, "The day when you could simply build a better mousetrap and the world would beat a path to your door is long since gone. Today you not only have to build a better mousetrap, but you've got to build a better program to promote it." Success in today's market depends almost completely on doing the best job of creating product demand through advertising, promotion and sales. Quality differences have become too minute in many cases to be the determining factor. No new product should ever enter the market without those responsible for advertising and promotion being present at the planning stages from the very beginning. Not only that, but every member of the organization taking part in the campaign must understand the real objectives of the program. As a matter of fact, it is especially important that the sales group know all about the advertising and promotion program and be provided with all possible aids.

Sales

Since sales is the direct productive line function of a marketing organization, it can be seen that the other divisions exist primarily to make the sales effort more effective and more profitable. The sales staff should be held responsible, first and foremost, for maintaining sales volume within price structures established or approved by top marketing and general management executives. Through market research, quotas can be set up and record systems used to predict what fabrics and in what quantities should be sold during each period of the year. Such forecasts should be periodically compared with the actual sales effort. If performances stay close to predictions, nothing further need be done. Use of the "management by exception" principle is often employed in this situation wherein a designated person is responsible for checking records constantly to see if performance keeps within the estimates that have been established.

Line sales people need to know where they stand, what is expected of them, and how they are measuring up against the standards set for them to reach. In general, they must be supplied with facts, techniques, enthusiasm, a confidence in the company, a knowledge of company objectives, and an exposure to top management thinking. Even a "natural born" salesman can benefit from a sales training program which will acquaint him with his product, competition and markets. Sales people not only need all of these staff services that should be incorporated into a marketing department, but help maintain them by contributing greatly to the data required by these staff functions.

A good salesman should accurately report all essential facts concerning each sales call in a prescribed "Unit Call Report" that lends itself to factual reporting at a minimum effort. At the same time, the report should be designed facilitating fast analysis. The establishment of these unit call reports must be regarded as a positive market research tool, rather than as a justification for the expense vouchers. Since salesmen are by nature wishful thinkers, in order to differentiate between their hunches and conjectures, market research must be perceptive enough to allow for the optimism of the optimist and pessimism of the pessimists.

A good salesman does not necessarily make a good manager or executive, since this type of position requires a combination of the special aptitudes of both the line and staff personnel. Too many top line salesmen have been expectantly promoted to the post of vice-president of marketing only to cause grief and loss to the company as well as a feeling of inadequacy on their own parts for being unable to cope with the paperwork and to think ahead. As we have pointed out, the line salesman requires a different temperamental pattern from his staff counterpart; but in spite of this obvious fact, many sales organizations hire salesmen or convert salesmen into marketing men without even giving them aptitude tests. This should not be. Aptitude tests for selling skills have been highly perfected, and will usually reveal whether a man is emotionally geared to handle staff functions and/or to go out and get orders.

The importance of customer service is often overlooked. Many textile companies are industry leaders today because of the effectiveness of this marketing effort. Others have suffered adversely when their poor product service was unable to cope with customer needs.

With price and quality differentials between various tex-

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tile manufacturers becoming increasingly non-existent, it is now up to the salesman more than ever before to provide something beyond "products at the right price" in order to come home with the sale. This "something extra" is Customer Service. Many textile people are on the receiving end of this service in their dyeing and finishing operations. Since price and quality of dyestuffs is more or less uniform, the salesman who is able to help the dyehouse superintendent solve his problems will invariably get the order. Translated in terms of the textile salesman, for example, it is a known fact that in the automotive industry, the salesman who understands the automotive industry's peculiarities, working together with the development engineers of the automobile companies in designing their fabrics is the only one who succeeds in that industry.

The successful salesman of today is imbued with the idea of servicing his customers first and *then* concerned with making a sale as a result of his assistance. Of course, he can only service if he knows a good deal about his customer's business and has a competitive product to offer. But such technical sales service personnel are often in an excellent position to determine a customer's real needs and wants, and to arrange for him to receive them. Furthermore, they should be able to use the terminology of their trade. If the customer wants to talk fabrics in terms of gauge and PSI, customer service people (as well as sales people) should be able to translate textile specifications to the customer's terminology. An experienced salesman, by working closely between the mill and the market, can often correct or improve a product or impression and therefore sales.

The synthetic fiber producers present excellent examples of customer service. While it is true that most textile mills cannot afford to do this as well as fiber producers, there is practically no textile organization that cannot do more by giving this aspect the thought and attention it deserves.

Marketing Administration And Control

The area to be discussed here can be thought of as consisting of two parts: (1) marketing administration; and (2) production/sales co-ordination and inventory control. Proper functioning of the marketing department's staff divisions involves considerable handling of tremendous amounts of data. Analysis of orders as they come in, the need to keep up with inventories, goods in proccess, supplies on hand, etc., are only a few of the demands placed upon marketing administration and control. Developments in sales, market and production areas must all be balanced against each other constantly, continually and correctly. This department is the closest connection link between the staff functions of manufacturing and the over-all marketing program.

Marketing administration assists marketing management in preparing and maintaining forecasts of orders, sales, budgets, expense estimates, cost records and other controls. They are directly responsible for scheduling orders in keeping with manufacturing restrictions and requirements, working with accurate up-to-date cost data provided by the mill so as to achieve the most economical operation possible. Their accuracy of forecasting and scheduling can do more to reduce production costs and the amount of capital tied up in investments and inventory than almost any other management function.

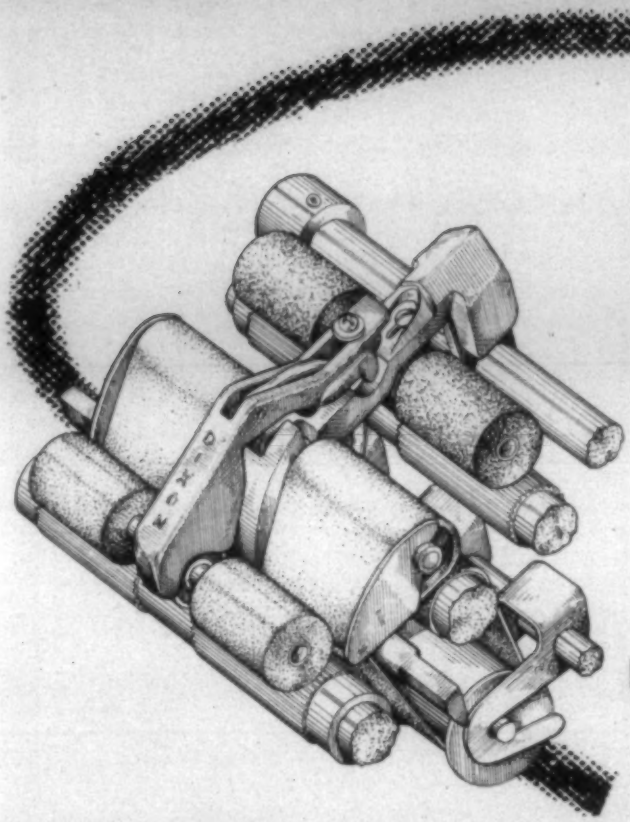
Maintaining Inventories

The marketing administration should also have the responsibility for maintaining inventories. This control is becoming most important to the successful marketing of textile products because more and more it is becoming the mills' burden to carry inventory for the cutter and retailer. To have the right goods available at the right time is sometimes more important for successful selling than having the right price. On the other hand, the financial risk involved is very great, and therefore speedy and accurate co-ordination of all facts concerning forecasts, manufacturing schedules, orders and other market developments are becoming of vital importance.

This department is also responsible for providing market research with accurate data drawn from past sales records and inventory control reports. It has been our experience that extremely valuable data usually exists in these records, but is insufficiently utilized due to the methods by which they have been assembled. As a matter of fact, one of the deterrents to efficient market research has been the enormous amount of records which are impossible to handle manually. With modern data processing machines, it is possible to draw off as by-products that information which will be of assistance and value to the internal market research effort. This equipment will provide the salient facts broken down in all directions. This daily operational breakdown is not beyond the possibility of any medium-sized organization.

How is this done? By setting up data processing equipment so as to get facts and figures as fast as possible, working directly from the original order and comparing this

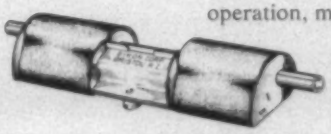
"Modern marketing must include the following: (1) an individually tailored program containing both long and short range objectives; (2) a functional organization to carry out the marketing plan, using every marketing tool effectively, economically and propitiously; and (3) an integration with the manufacturing and administrative components of the organization."



For Roth System Spinning...

FAST PAY-BACK AT MINIMUM PAY-OUT... with a Dixon engineered changeover plan

Dixon offers the perfect balance of a proven product plus engineering know-how . . . a combination which has produced many fast pay-back changeover plans for spinning mills*. Each Dixon plan is more than just equipment. Our engineers will gear the program to the mill's cash flow, helping to provide major economies on a systematic schedule.



While Dixon Spinning Changeovers are often installed complete in one operation, many mills take advantage of our multi-step changeover program. On Roth System Frames, the usual plan calls for first adding new middle top rolls, aprons, and cages. Immediate cost-savings result through less lubrication, fewer laps and ends down, reduced cleaning . . . AND LONGER DRAFTS!

Systematic completion of the Double Apron Roth changeover can be made to suit the individual mill. The final Double Apron Roth changeover eliminates all oiling and cap bars, increases drafts, and gives our customers the most competitive spinning efficiency:

- Middle and back rolls run on RULON . . . the oil-free bearing that never is lubricated . . . outwears nylon 12 times.
- The Dixon patented self-aligning front roll rides on a hardened and ground, pre-lubed, sealed, precision ball bearing which is guaranteed for years and years and never requires lubrication.
- All parts are maintenance free. Pay-back on your investment is a matter of months.
- Productivity and quality improve. Yarn is cleaner . . . seconds decrease.

Compare "Pay-Out versus Pay-Back" on *both* Roth System changeovers being offered to the trade and you'll buy Dixon. Ask for our detailed report showing how an actual installation was completely paid for in 25 months and is now saving $1.50 per spindle per year by using Dixon Changeovers.

Dixon Corporation, Bristol, Rhode Island. Southern Sales: Dunson & New, Inc., Box 9202, Greensboro, N. C.; Box 321, Greenville, S. C.; Box 445, West Point, Ga.

*Here are a few of the more than 2,000,000 spindles installed:

Mill	Spindles	System
Martha Mills	44,450	Double Apron Roth
Deering Milliken	121,500	Double Apron Roth
J. P. Stevens	72,800	Double Apron Casablancas
Clinton Cotton Mills	85,612	Double Apron Casablancas
Crompton Highlands Mills	10,300	Double Apron Roth

Dixon

Engineered devices for weighting and guiding top rolls since 1876

data with sales forecasts, inventory, production schedules and other items.

This need for continually up-to-date facts is a necessary condition for a proper marketing function, and really for the entire realm of textile management. We feel that almost every textile organization has something to gain by examining its data processing setup to see what can be done to improve the speed and area of finding and presenting the facts.

In conclusion, let me emphasize that what we have been talking about is based on practical experience with some remarkable results. For instance, a knitting mill found that in 1956 its share of the West Coast market was only 2%. Within one year, (that is, during 1957) it was able to increase its share to 18%. Another example: A synthetic mill was able to increase its sales volume by 25% against an over-all decline in the industry of 5%. Another mill, which for years, concentrated on the apparel market, developed a new product for the upholstery industry and within 18 months, it was able to build up sales volume in the upholstery trade of over half-a-million dollars.

A particularly heartening example of the textile industry as a whole is the case of a textile mill breaking into a market which is dominated by the paper and plastic industry, namely wall covering. A mill developed a product that makes a particularly attractive and competitive material that can be used for wall covering. It has been running this department for the last six months in three shifts, six days a week and is still unable to meet the demand.

Summary

Summarizing, I would like to leave these thoughts with you:

(1) Reliable up-to-date facts have to and are replacing guesswork as a basis for planning and controlling our business. Based on facts, future performances can be predicted with much greater accuracy than generally realized.

(2) To get the facts, modern electronic data processing gives us the necessary tool to do the job fast and economically. To analyze the facts quickly and act upon them, our organizational structure has to be streamlined, pinpointing clear-cut areas of responsibility and facilitating teamwork at the same time.

We have discussed this in some detail and I just want to focus attention on the necessity of making management market-oriented which is contrary to many mills that are still production-dominated. However, this does not mean that the company should be sales-oriented in the narrow sense of selling alone. It is the primary function of marketing to discover whether and where a profitable market exists for a product that can be manufactured by the mill to satisfy the market and to plan ahead, maintaining a profitable balance between manufacturing and marketing demands.

The economic facts of the textile industry are grim. We can expect a significant upswing in textile demands only as we create it; and this we can only do through concentrated teamwork of the kind we have discussed.

Government plant pathologists estimate that diseases cost two million bales of cotton annually in the United States. Many of the common diseases of cotton have been recognized for over half a century and controls have been developed for a number of them.

Dan River's Training Program:

Job Skills PLUS The Arts

A common complaint among textile management and supervision in the past has been the fact that an adequately trained work force has been short and is getting shorter. One of the basic reasons cited for this is that in too many communities young people have not been seeking textile jobs in sufficient numbers. Yet older employees reaching retirement age as well as those who leave in the normal course of events have to be replaced.

Dan River Mills Inc. in Danville, Va., found that this problem had become particularly acute by the end of World War II and set about doing something about it. It recognized in the first instance, however, that any solution must go far beyond the mere recruitment of new employees. The pumping of new blood into an organization is, of course, beneficial, but Dan River felt that a company's real strength lay not in new and untried workers, but in those who had proved themselves in the mill. The decision was reached to capitalize on this inner strength and from this came the birth of a training program which today is probably more ambitious in scope than any to be found elsewhere in the textile industry.

First steps in the formation of this training program came in 1946 with the establishment of a vocational training school and the appointment of C. J. Schollenberger as its director. Next came the selection and training of one of Dan River's high school graduates to teach rudimentary reading and writing to those employees who had never had the benefit of a formal education. Finally came the enrollment of students, but with the first class numbering only 14 persons, few envisioned the tremendous growth which was to occur over the next decade.

Growth there was, however, and today concrete evidence of the overwhelming success of this "extra-curricular" activity can be found in the fact that each year over 1,000 persons enroll in the school and at the present time 283 adult students are working for a high school diploma. To teach this student body, more than 65 teachers, many with college degrees, have been selected from among the ranks of Dan River employees and trained in teaching training classes. In addition, the courses of study have been expanded to a point where the 1958-59 curriculum contains 23 academic courses ranging from first grade to college trigonometry, and 54 vocational courses, most of which are related to textile skills. In addition to teaching all the major textile skills, however, the school also offers such divergent subjects as typing, home nursing, welding, public speaking, and many other courses not directly connected with textiles.

One interesting and novel aspect of this school is the fact that although it was founded by Dan River Mills for Dan River employees, it is not limited to company employees or even textile workers. Meat cutters, ministers, salesmen, farmers, housewives, and in fact citizens from all walks of life who live in and around Danville are enrolling in the Adult Evening School. In the fire-year period from 1953 to 1957, for example, 1,569 adults not associated with the mill enrolled in the school in order to take courses which would either help them in their work or would make it possible for them to apply for better, more satisfactory jobs. In the same period, 89 non-mill-connected students earned high school diplomas.

Of the number of persons completing high school requirements at the school and going on to college, none has failed to make the grade. Many have gone on to success, including the 1957 National Commander of the American Legion, Dan Daniel, who is now assistant to the president of Dan River Mills.

A remarkable case is that of Miss Virginia Lea Golson who graduated in 1948. As it happens, this was also the year she retired from work at the mill. She was 66 years old. Miss Golson had been working as a weaver from the time she was nine and at the time of her retirement she worked in the designing department. Instead of going to the old ladies' home, Miss Golson, in succession, applied for admission and graduated from the Spartanburg (S. C.) Junior College. Net yet satisfied, Miss Golson enrolled at Appalachian State Teachers College, Boone, N. C., and received her degree at the age of 71. She is now engaged in private tutoring. To make a remarkable story even more incredible, it should be noted that Miss Golson worked her way through college in a laundry.

Supervisory Training

The contribution of Dan River Mills' training program to the progress of the company has been termed "impossible to measure in exact terms" by W. J. Erwin, president, in a preface to the institution of supervisory training at the school. The program has "unquestionably" contributed sub-

Science classes are taught in this classroom. Credits earned at the Dan River Evening School are applicable toward a high school diploma approved by the Virginia State Board of Education.

stantially to the company's well being, he said. "In the past, our training activities have emphasized job skills plus academic education leading to a high school diploma. Now we plan to lay equal emphasis on training in the art and science of management."

Mr. Erwin pointed out that the two most compelling considerations in the company's increased concern with supervisory training were: "First, this is a period of rapid change in managerial techniques. Simply keeping pace with new developments requires training and study. Second, the future growth of the company will depend in large measure on the abilities of our management group. For these reasons alone, greater emphasis on supervisory training is necessary and timely." The objective of the new program was, as explained by Mr. Erwin, "to help the members of management become better managers."

Persons participating in the supervisory training program include supervision from all levels and administrative and technical jobholders even though the latter may not have the responsibility of supervising other employees. A Supervision Diploma in textiles is awarded to personnel who complete satisfactorily the required combination of courses offered. The diploma is issued in accordance with standards agreed upon by Southern textile manufacturing states and is recognized throughout the South.

The guiding theme of the school is that time and effort invested in training by the student will bear dividends in the future. To carry forward this idea, the school issues a Supervisory Training Record book, which resembles a bank book, to each student. As a course is completed appropriate notations are made. The foreword to the record book says, in part, "What you have learned can be like money in the bank. It is yours, and no one can take it away from you."

The supervisory training program is a long-range one so particular courses and the number offered is subject to change from time to time. A listing and description of the various courses offered as the needs develop includes:

(1) *Safety*—Accident prevention is one of the supervisor's important responsibilities. In this course, Dan River Mills' safety program is reviewed. Supervisory responsibility for educating and training employees in safe performance of their jobs is highlighted. Attention is also given to what a supervisor should do if an accident occurs, as well as the obligations the company has under Workmen's Compensation laws.

(2) *Waste Control*—This course provides instruction on the cost per pound of waste at each process. It explains proper collecting, identifying, weighing and recording of waste. Phases of the course show how raw material waste standards are set up, how to find causes for deviations from standard and how to set up proper controls on the job. The course covers other waste problems not connected directly with raw material.

(3) *Quality Control*—The course explains the reasons for quality demands placed on the company by its customers. It shows how quality is controlled, and reviews standard defects along with the reasons for these standards.

(4) *Work Simplification*—Many jobs can be simplified so that they may be performed more efficiently. This course covers the principles, plus the tools used to analyze and simplify a job in an orderly and systematic manner.

(5) *Time Study and Wage Incentives*—This course includes a brief history and background of time study. It shows how time study is used in establishing wage incentives and is based on a variety of actual problems. A better understanding of the Dan River wage incentive system is provided and this knowledge assists the supervisor in handling rate changes on the job.

(6) *Cost Control*—This course deals largely with a study of the principal segments of total cost. Special attention is given to the major items of fabric cost, namely, manufacturing material, labor, and manufacturing overhead. Practical measures which can be taken to keep these items under control are explained.

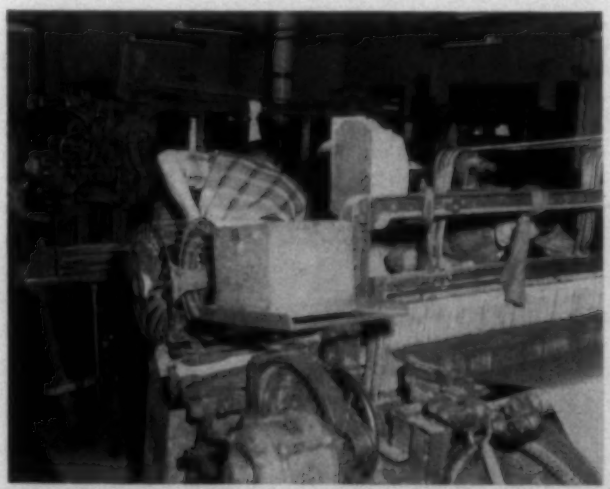
(7) *Job Evaluation*—This course acquaints the student with the principles of job evaluation used in establshing the proper relationship between jobs. It covers the preparation of job descriptions, methods of evaluation, use of wage surveys in setting rates, and administrative procedures to keep job ratings up to date.

(8) *Human Relations*—Special emphasis on the vital human relations phase of the supervisor's job is given in this course which evaluates the qualifications and responsibilities of a supervisory position. Also emphasized is the fact that the successful supervisor gets his work accomplished through the co-operative efforts of other people.

(9) *Lesson Instructing*—Supervisors can perform more effectively if they are capable instructors. By actual practice, this course trains the student in the procedures and most effective methods for teaching given jobs to learners and other untrained employees. It also shows how to prepare outlines and how to arrange in logical order the material to be taught.

(10) *Conference Leading*—This course provides practice in how to prepare for a meeting, how to lead group thought to a pre-determined conclusion, and how to solve problems by group action. It is deemed necessary because many meetings result in wasted time because the leader allows it to bog down in minor details. Emphasis is given to techniques used to secure participation by all members attending a meeting of the conference type.

(11) *Communications*—Getting the right information to the right people at the right time is an important problem in any large company. This course concerns primarily the various methods used in communication between different levels of management, the need for brief but com-



This section of the school is devoted to training dobby weavers before they are assigned regular jobs in the mill. This training is given to all new employees whether experienced or not. When new equipment is purchased by the mill every effort is made to train operators and fixers on this new equipment in the Training School before final installation is made.

plete and accurate reporting, and the controls needed in order to obtain effective communications.

(12) *Speed Reading*—A belief in the school is that the higher a person advances in management, the greater his need for the ability to read at an above average pace and to understand what he has read. The speed reading course trains the student in proper eye movements and in the use of reading shortcuts. During the course the student is urged to increase his vocabulary.

(13) *The American Business System*—A surprising amount of misinformation about the American business system has been indicated by students at Dan River's training school. This course explores how the system actually works and the benefits it offers to individuals. It stresses how freedom of the individual is essential to its successful operation.

(14) *Labor Analysis*—This course is based on actual mill problems and gives the student an understanding of Dan River's system of labor analysis and labor cost control. Course material has daily application to the student on the job and helps him keep labor costs in line with required standards.

(15) *Research Problems*—The general functions of the company's research division are covered in this course. Subjects such as future planning, new developments and chemical processing are included in the course which ties in with production, sales, quality control and designing.

(16) *Textile Testing*—This course is offered since modern testing techniques at various steps are essential to high quality fabrics. Latest testing methods for yarns, fibers, dyestuff, finished cloth, etc., are studied and consumer and textile trade association standards are explained.

Notes From The Annual Meeting Of The National Cotton Council

THE National Cotton Council's new president is A. Boswell Stevens, big-scale cotton farmer, banker and political leader from Mississippi. Stevens was elected at the council's annual meeting at the Hotel Dinkler Plaza in Atlanta, Ga., earlier this month. He has been on the board of directors of the council since 1939. He is a past chairman of the Mississippi uit and was on the committee of organization for the council in 1938.

The group's board of directors named three new vice-presidents, B. L. Anderson of Fort Worth, Tex.; L. T. Barringer of Memphis, Tenn.; and D. W. Brooks of Atlanta. Aubrey L. Lockett of Vernon, Tex., was named treasurer of the council. Named advisors to the board were Francis J. Beatty, Charlotte; Robert R. Boker, Hartsville, S. C.; A. L. Durand, Hobart, Okla.; Lamar Fleming Jr., Houston, Tex.

Harry S. Baker, retiring president of the National Cotton Council, told the group that 1958 had not been characterized by tragedy for the cotton industry but instead by a great opening-up of new opportunity. Baker pointed out that under the new cotton legislation—cotton acreage cuts will not be "ruinous"; the industry now has a policy which permits the cotton price to trend downward toward a competitive level; there is reasonable assurance that producers can rely on the availability of U. S. cotton; and competitors have been served notice that the cotton industry is going to have greater strength in fighting for markets. Baker emphasized that the cotton legislation obtained last year deserves a full and fair trial.

In other reports, the council members were told that . . .

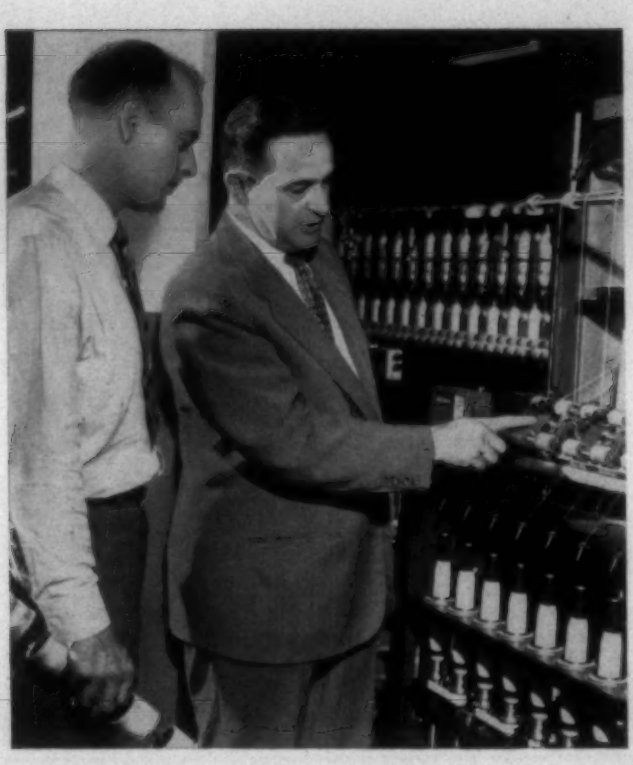
. . . the industry wants more elasticity in its fiber and is putting up some money for research to develop it. J. M. Cheatham, chairman of the council's Utilization Research Committee and president of Dundee Mills, Griffin, Ga., said that $15,000 has been made available for a basic study on improving the resilience of the cotton fiber. Research will be conducted at the Textile Research Institute, Princeton, N. J.

. . . a major advantage of chemically finished cotton over other types of wash-and-wear fabrics is cotton's freedom from temperature sensitivity. Dr. Leonard Smith, director of the council's Utilization Research Division, disclosed the results of a recent survey of representatives of more than 50 oganizations, including chemical companies, cotton mills and finishing plants, research and testing laboratories and detergent manufacturers. The lack of temperature sensitivity on the part of wash-and-wear cottons means that they can be laundered in the same way as untreated cottons, in water hot enough to get them clean, Dr. Smith pointed out.

. . . Russia has the land, labor and technical ability to greatly increase raw cotton production and could become a serious threat to U. S. cotton exports. Leonard A. Mobley, foreign trade economist of the council who just returned from a one-month tour of the U.S.S.R. with a U. S. Department of Agriculture study team, said that under the current seven-year plan Russia expects to increase cotton production by about 35% over the 6.0 million bales produced in 1958. Only subsequent events will tell, he said, whether the increased production of cotton will be consumed in Russia's domestic market or exported to markets in the communist and free world.

In other business the council defeated a proposal calling for support of a one-price system for cotton that would make the greatest use of normal trade channels and minimize the role of the government in cotton marketing. It voted to ask Congress for fiscal 1960 funds to (1) operate existing pilot plant facilities two shifts a day and to staff and operate other research facilities; (2) to accelerate the present Extension Service effort on cotton ginning and marketing; (3) to develop a commercial means to measure other fiber length distribution and to start research of measuring other fiber properties; and (4) to develop the various means by which moisture in cotton can be accurately controlled in gins. The council will also work for additional funds for ginning and harvesting research.

Whatever your frame o



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You can make a big improvement in the quality and quantity of your production—and a big reduction in the time you spend "trouble-shooting" in your spinning room—simply by using the right spinning cots. That's why hundreds of mills have standardized on Armstrong Accotex Cots.

As every mill man knows, each fiber and blend present different problems in spinning—problems which can vary on different drafting systems. As a result, there can be no universal cot material that will work equally well on every combination of frame and fiber.

In the broad line of Accotex Cot materials, however, you will find a roll covering which will help you eliminate trouble and get good performance with any fiber or blend—and on any spinning system you use.

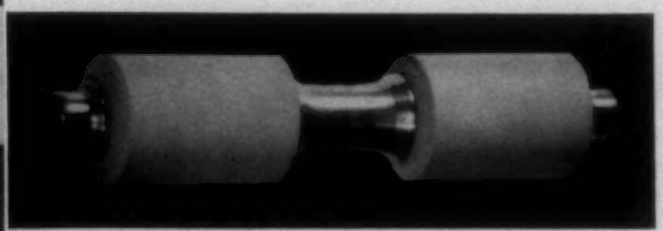
Where lapping is a problem, many mills have been able to control it with Accotex J-490 Cots. These cots contain certain electrolytes that tend to repel broken ends and prevent them from lapping.

On frames where high static aggravates the lapping problem, Accotex NO-764, an anti-static material, has proved effective. This material prevents the accumulation of static charges on cot or fiber, and so minimizes the risk of lapping.

If eyebrowing is a problem on spinning and roving frames with flat clearers, NC-762—another Accotex anti-static material—will help you eliminate it. The "constant-friction" surface of this cot packs loose fibers back under the clearers to keep eyebrows from forming.

On some frames, a softer cot material has been found to improve break strength and reduce yarn irregularities. Accotex Cots made of softer compounds are available to meet this need.

Your Armstrong representative will help you select the particular cot that will give the best performance with your frames and fibers. Call him or write Armstrong Cork Company, Industrial Division, 6502 Davis Avenue, Lancaster, Penna.



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The Sad Decline Of Lancashire

BY WM. HAYS SIMPSON

Lancashire, England, is a proud old name in Great Britain's cotton textile industry. But recent years have seen a rapid decline in the number of its mills and the spirit of its workers. The author of the following was for many years a resident of Lancashire, and his report here stems from a visit to the area this past Summer. Now a member of the faculty at Duke University, he sums up his observations of England's cotton textile industry with the thought that there is a brighter future only for a smaller industry in Lancashire.

TO any long time resident of Lancashire, proud of his area's role in cotton manufacturing in the world, the decline in the industry within recent years is most depressing. The United Kingdom, which in 1928 boasted of 57,000,000 spindles, had in July 1957 less than 22,500,000 spindles. In January 1950 the number stood at 29,580,000; 1955, 25,183,000; and in July 1956, 23,972,000. During the period from July 1956 and July 1957 almost 1½ million spindles had become inactive. Between January 1956 and January 1957 the number of looms declined by about 29,000.

Should this once proud resident travel in most any direction in Lancashire he would find closed mills. According to the Minister of State, Board of Trade, 15 mills closed in 1954, 90 closed in 1955, 96 in 1956, 60 in 1957 and 46 during the first five months of this year. Thus some 307 mills closed in less than four and a half years.

But what effect did this have upon the number of workers employed in cotton mills? In June 1951 there were 318,900. By June 1954 the number had been reduced to 291,000. In March 1958 the number stood at 240,800. There had, therefore, been a loss of 78,100 workers since 1951 which means that the industry has fallen in terms of numbers employed by almost a quarter since 1951. In addition to this number there are thousands of cotton mill workers on short time.

Fortunately, many of the workers released from employment in textile mills find jobs in expanding industries in the area but others who worked in neighborhood cotton mills cannot, or find it difficult to, travel several miles to new places of employment. Skilled cotton mill operatives often have to accept new positions at a sacrifice in pay.

The closing of the mills of course leads to a loss in population in the area for people move to places with greater employment opportunities. There are, therefore, in certain parts of Lancashire empty houses when in most areas in England there is a shortage of homes.

This past June the owner of a century old family business was quoted in the *Daily Mail* as saying: "A lot of manufacturers in Lancashire are not running at a profit at the moment but merely providing employment for some good old servants. I can close my mill down tomorrow, scrap the looms, invest the money in a buiding society, and make five times more than I am doing now by keeping the mill open."

To what, therefore, can one attribute the unfavorable conditions of the cotton manufacturing industry of England? There are numerous contributing factors, a number of which will be discussed in the following paragraphs.

During World War II there was a shortage of cotton and the cotton industry, not being as essential as some others to the war effort, was curtailed. Mills were closed, machinery stored and the factory space used for other purposes. Operatives turned to work in other industries. When the war ended it was necessary to clean the stored machinery and to make ready the mills for production. Many new employees had to be recruited and much old equipment, which should have replaced by new, was put into production. In the meantime American mills, not as badly affected by the war, had developed new techniques and enjoyed the use of more modern machines. However during recent years many English mills have been re-equipped and it is reported that approximately $300,000,000 has been spent for that purpose during the past decade.

In some parts of Lancashire, trade unions opposed the innovations introduced by the new machinery. Time and motion studies were declared taboo by certain labor leaders. Productivity teams, which included labor representatives, were sent to the U. S. to note and to report on textile manufacturing in this country. These studies were very instrumental in convincing labor groups that changes were essential to the survival of the industry.

The *Manchester Guardian* of April 8, 1957, contains an article on automation in the cotton industry in which it quotes Miss Alice Foley, Secretary of the Bolton and District Weavers Association, as telling an audience of mostly women textile workers that the Lancashire four-loom system had become as old fashioned as the spinning wheel. She said that by 1958 the six-loom system would be abolished and appealed to the weavers to drop the old idea that the trade union's function was to say *no, no,* to every scheme. She pointed out that study consultants were talking in terms of 30, 40 and 50 looms but with these changes the wage structure would rise from seven and eight pounds to ten and 11 pounds a week.

With modernization of the mills, shift working was promoted to reduce costs. Some trade union resistance appeared in certain areas and difficulties arose in obtaining operative for additional shifts. Because of various restrictions, it is difficult for women in England to work more than 38¾ hours on double-day shift and a 16.1% premium in wage costs is therefore involved as against the 45 hours now commonly worked. Such conditions obviously reduce the advantage of additional shifts and with unions insisting on premium wage rates for shift workers, employers will hesitate in changing from the one-shift system.

The importation of cheap cotton cloth from Asiatic countries made by low paid workers has disturbed the

cotton industry of England. The government has given some protection in the home market against non-Commenwealth textiles by establishing a tariff of 17½% against piece goods and 20% against made-up goods. It has imposed quotas on textiles originating in Japan and China and gives very small quotas for other Communist countries.

Under the Ottawa Agreements of 1932, however, Commonwealth goods are admitted duty free to the United Kingdom. In 1932 it was supposed that cotton goods would flow freely throughout the Commonwealth. However during the course of years India has imposed a duty of more than 25% on English cotton goods and by import control has limited United Kingdom exports to about 8 million square yards. At the same time Pakistan imposes duties to over 50% on English cotton goods and import licenses are difficult to obtain.

Cotton manufacturers in both India and Pakistan not only have the advantage of cheap labor but enjoy a concealed subsidy by manipulation of raw cotton prices so that their mills receive cotton at one pence per pound below world prices.

As might be expected, this flow of cotton goods has greatly increased from these countries to the United Kingdom. Since 1950 India has increased its exports of cotton cloth and made up goods to the United Kingdom from 76.5 million square yards to approximately 200 million square yards in 1957 while Pakistan since 1953 has increased its exports of cloth to the same country from a negligible quantity to more than seven million square yards in 1957.

Cotton manufacturers in Lancashire have long advocated a revision of the Ottawa Agreements of 1932 but to date have failed in their efforts. However negotiations with India and Pakistan to enter into mutually satisfactory arrangements—establishing quotas, etc.—failed only because Hong Kong, another member of the Commonwealth, would not approve the agreement.

Hong Kong, like India and Pakistan, enjoys Commonwealth preferance treatment, and like the other two countries its export of cotton goods to the United Kingdom has increased during this decade—from 20 million square yards in 1950 to over 100 million square yards in 1957. This provoked heated debate in the English House of Commons last June.

Much was said in the course of debate in the English Parliament about cheap Asiatic labor especially in Hong Kong where the hours of work for women were the longest of any of the Asian countries—women working 12 hours a day, seven days a week with only four holidays in a year. The system stipulates that if they take a day off they lose two days' pay.

Mr. E. Thornton, member of Parliament, stated that he noted on his recent visit to Hong Kong that there were nine new mills operating a three eight-hour shift system and the working conditions were good. The other nine or ten new mills operate on a two 12-hour shift system as do also about 150 small mills. He pointed out while working conditions were good in the new mills, they were deplorable in small mills. While wages in Asia are low as compared with those of Western nations, the average hourly earnings of textile workers in Japan and India, he contended, are higher than in Hong Kong. Thus with low wages, even as compared with other Asiatic countries,

Hong Kong is enabled to place cotton goods on the market at lower prices than Lancashire mills.

But while losses in the home market have hurt Lancashire mills, the loss of foreign markets has caused much distress. The President of the Board of Trade, Sir David Eccles, pointed out that in 1913, the peak year in the history of the British textile industry, production was eight billion square yards, exports were seven billion square yards and retained imports were negligible. These figures compare most unfavorably with those of 1957 when not eight billion but 1,700 million square yards were produced, only 285 million square yards exported and if re-exports are added, 455 million square yards. Imports retained amounted to 250 million square yards. This heavy loss in export trade is attributed largely to cheap production in Asiatic countries and to the development of cotton manufacturing in South Africa, Australia, countries of South America and in other areas which now care for a part, if not all, of their local requirements. Thus a great industry known for decades for its extensive exports had cause for even greater alarm when it noted that for the first quarter of 1958 the volume of cotton cloth imports from all sources exceeded that of exports.

The employers and most workers want well equipped mills because of foreign competition for markets. Modernization of the mills would be all the more necessary if England participates in the European Free Trade Area. While union opposition to automation has eased in the past years, other changes are necessary. For example, the union's insistance that when two shifts are worked that the second shift get payment for 45 hours when working only 37½ hours or thereabouts hardly lends encouragement to increased employment or to a more extensive use of new and expensive equipment.

Because of the external and internal troubles involved, it is highly possible that there is a brighter future only for a smaller industry in Lancashire.

Fabric Widths Increase

During the period from 1947 to 1958, the average width of man-made fiber and silk broad woven fabrics increased 11%, according to the Bureau of the Census. In 1947, the average linear yard of silk and man-made fiber fabrics included 1.22 square yards of material. This ratio increased to 1.36 during the first quarter of 1958.

The average linear yard of rayon and acetate fabrics increased from 1.22 square yards in 1947 to 1.34 square yards in 1958. With this increase in fabric widths, there was, as would be expected, an increase in the weight per linear yard as indicated by the decline in the number of linear yards per pound of fabric produced. In addition to the shift to wider fabrics, there has been a relative decline in the importance of 100% filament rayon and acetate fabrics. These fabrics, which are the lightest major group, accounted for 74% of all rayon and acetate fabric production in 1939. This percentage declined to 63% in 1947 and to 44% in the first quarter of 1958. The effect of the several factors is shown in the increased weight per square yard of rayon and acetate fabric produced.

During the years covered by this report, the newer man-made fiber fabrics came into production. As a group, these fabrics are lighter than rayon and acetate and in the latest period surveyed, they averaged 5.83 square yards of material per pound.

William K. Child Elected President Of American Textile Machinery Association

MEETING earlier this month in Boston, the American Textile Machinery Association elected William K. Child as its president for the coming year. Child, who is vice-president of the Draper Corp., Hopedale, Mass., succeeds James H. Hunter, president of James Hunter Machine Co., North Adams, Mass. A native of Greenwood, S. C.,

W. K. Child

James H. Hunter

Child has served the past two years as A.T.M.A. vice-president. He previously has served as a member of the board, and was chairman of the A.T.M.A. exhibition committee from 1952 to 1954. He joined Draper at Spartanburg, S. C., in 1936; was appointed Southern sales representative in 1949; a director in 1950; and vice-president and sales manager in 1951.

Leeson Named Vice-President

Named to succeed Child as vice-president was Robert Leeson, president of Universal Winding Co., Providence, R. I. Leeson has been active on the A.T.M.A. board and served as A.T.M.A. president in 1948. He has been associated with Universal since 1931, and has served as its president since 1937.

F. G. Brigham Jr.

Mildred Andrews

F. Gorham Brigham Jr., secretary-treasurer of Saco-Lowell Shops, was re-elected treasurer of the association, and Mrs. Mildred B. Andrews continues as executive secretary and director of public relations.

The association expanded its board to include a representative of its new Division VII, naming to that post Thomas H. West, president of the Draper Corp. Other directors for the coming year are: Division I—J. Hugh Bolton, president, Whitin Machine Works, Whitinsville, Mass.; Division II—Thomas Stilwell, sales manager, textile division, The Warner & Swasey Co., Cleveland, Ohio; Division III—Frederic W. Howe Jr., president, Crompton & Knowles Corp., Worcester, Mass.; Division IV—James H. Hunter; Division V—Robert Leeson; Division VI—P. Kay Schwartz, president, Proctor & Schwartz Inc., Philadelphia, Pa.

Directors at large include William K. Child; J. Ebert Butterworth, president, H. W. Butterworth & Sons Co., Bethayres, Pa.; Roy G. Ross, vice-president, Barber-Colman Co., Rockford, Ill.; and Thomas J. Ault, president, Saco-Lowell Shops, Boston.

Remarks Of The Retiring President

In his remarks as retiring president, James H. Hunter commented on a number of recent events affecting prospects for both the textile and machinery industries. Among these he pin-pointed the ten recommendations made by the Special Subcommittee of the Senate Committee on Interstate and Foreign Commerce; the liberalized credit policy of the Small Business Administration; and the wave of voluntary wage increases by Southern mills. "Each of these factors are singularly significant," he said, "but viewed together their accumulative effect makes 1959 not only a time of challenge, but a period of opportunity for the two industries: textiles and machinery."

In other business, the meeting discussed with representatives of the American Cotton Manufacturers Institute the work under way on the problem of depreciation allowances; heard a report from J. H. Bolton Jr., vice-president of Whitin Machine Works, on the A.T.M.A. Exhibition-International to be held in May 1960 at Atlantic City; heard a report from George McRoberts of Whitin on A.T.M.A. public relations; and heard a progress report from Robert Leeson on activities of the A.T.M.A. committee on machine financing in its work with the Small Business Administration and other agencies.

Thomas H. West

J. H. Bolton

Frederic W. Howe

P. Kay Schwartz

J. Ebert Butterworth

Thomas J. Ault

Why THE GIN Is What IT IS Today

By CHARLES M. MERKEL*

THE history of public research in cotton ginning is not the subject under discussion but a little background is necessary if we are to understand the trend to more elaborate gin plants which has been in evidence since the early 30s. The Ginning Research Laboratory was established at Stoneville by an Act of the 71st Congress following some successful work on drying seed cotton in the early 20s. This drying work was requested by a group of Mississippi Delta planters in an effort to reduce the losses caused by the heavy discounts assessed against "rough preparation." At that time the long staple cottons being grown were difficult to gin smoothly because of the high moisture content prevalent in cottons harvested in high humidity areas. These bales of otherwise prime cotton were discounted one or more grades because of rough preparation.

The purpose of this history is to point out the fact that prices paid for cottons based on *grade* dictated the type of processing provided at gins then as it does now. A further purpose is to suggest that had the penalty for rough preparation been less severe, or more in line with the actual effect of rough preparation on spinning value, or had the cost of picking cotton dry and ready for ginning not been prohibitively expensive, it is doubtful that the planters would have demanded research. In fact the problem would not have been serious. The records do show, however, that the dryer was developed, built commercially and installed in a high percentage of gins by 1945. The records also indicate that rough preparation dropped from a high of up to 30% of the 1937 crop in high humidity areas, to about 1% during the past few years.

The mill people have viewed the use of dryers in gins with mixed emotions over the years since it first came into being. Our laboratories have conducted hundreds of tests designed to determine the effects of artificial drying on spinning quality in an effort to answer the complaints or questions raised. These studies clearly show that drying can be beneficial or harmful, depending on how it is used on different types of cotton. These studies specifically show that when fiber and seed separation is accomplished when the fiber moisture content is about 7%, the preparation, from the classer's point of view, is satisfactory, and the fiber and spinning properties are preserved to the maximum extent. Slight reductions in upper half mean length as measured on the Fibrograph and reductions in yarn strength are associated with ginning cottons below 5% fiber moisture content. Perhaps the over-use of dryers at gins in efforts to clean modern cottons has caused some trouble at the mill. Here again the dollar sign plays a major part in commercial practices where the farmer is demanding higher grades from the gins they patronize and the ginners are responding by using drying to enhance cleaning.

*Mr. Merkel is engineer-in-charge of the Stoneville, Miss., cotton ginning research laboratory of the Agricultural Engineering Research Service, U. S. Department of Agriculture.

Mechanical Harvesting

Shortages of labor and the necessity for reducing production costs following World War II resulted in the widespread use of mechanical harvesting machines. These machines pick good quality cotton but cottons which contain more foreign matter and moisture than do hand-picked cottons. When ginned on simple pre-war gins these cottons were discounted on the market two to three grades because of the trash content. Laboratory spinning tests performed on these early trial lots showed that these cottons produced good quality yarns superior in some instances to yarns produced from comparable hand pickings. The tests did indicate, however, that the manufacturing waste (picker and card) was somewhat higher than from the hand pickings.

These tests *did not show* that the end use or spinning value of the machine-picked cottons were two to three grades, $40 to $50 on today's market, lower than comparable hand-picked. The price tag again forced action and the result was the saw-type lint cleaner. The government flow-through lint cleaner was tested in the Stoneville laboratory from 1945 until it was released to the industry following the 1947 ginning season. The results of these tests were reported to the industry along with results obtained from field tests on commercial model units in operation at that time.[1]

Nep Increases

These reports stated that grade improvements to two-thirds grade were possible from the addition of lint cleaning on spindle-picked cottons. Slight reductions in yarn appearance grade from the use of these cleaners were accompanied by significant reductions in manufacturing waste. Slight nep increases were noted but were not considered of major importance in view of the cleaning accomplished. These reports also showed that there was less fiber degradation from lint cleaning than from very elaborate

1. Cotton Lint Cleaning at Gins—An Evaluation from the Standpoint of Cotton Quality and Economic Factors. U.S.D.A., P.M.A., Cotton Branch. Processed, May 1951.

The use of dryers at the gin can be beneficial or harmful, depending on how they are used on different types of cotton. Such advantages as greater bale value to the farmer and reduced manufacturing waste in the mill may be offset by damaging effects of improper ginning or over-ginning. This article shows that modern ginning has revealed flaws in our present grading and marketing system and calls for the development of faster and more accurate cotton quality evaluation.

seed cotton cleaning combinations, which would not produce the same end result gradewise.

This short review of the history should supply part of the answer to why the gin is what it is. It should also serve to point up the fact that there is something seriously wrong with our quality evaluation and pricing system. If such were not the case, buyers would be able to pick the cottons suited to their uses, possibly undried and non-lint cleaned, paying for them *not* on the basis of what they looked like, but on the basis of how well they knew they would perform in the mill. Such an evaluation might show that rough preparation cotton would spin well since it is an indication that the moisture content was high at time of ginning. It is extremely doubtful that it would show the cotton to be worth one full grade less than a comparable smooth bale. Such an evaluation might also show that machine (spindle) picked cottons which are normally harvested early or before field degradation sets in, are better spinning cottons even though they might have more trash.

Such a new evaluation system would quickly force ginners to meet demands of farmers for processing which would produce the highest per bale dollar value, even as they are now doing under the grade and staple system; the difference being that the highest grade, as we know it now, would not necessarily be the highest dollar value. Lacking the tools for such complete evaluation buyers are still forced to buy cottons on standards which are not always adequate for the purpose. There is some hope that the recommendations of the industry—U.S.D.A. Study Group and the Fact-Finding Committee on Cotton Quality will lead to an intensive research program for the development of instruments and techniques which will help in the evaluation of bales of cotton before purchase.

The recommended machine sequence for combination drying and cleaning of spindle-picked and rough hand-harvested seed cotton is as follows:

(1) Feed Control—maintains even flow of seed cotton to dryer and cleaning units at the rate required by the number of gin saws or stands in the plant.

(2) First-Stage Dryer—seed cotton moisture content reduced up to 3% and to a level where cotton can be handled through cleaning units without roping and twisting.

(3) First Cylinder Cleaner—used for opening and fluffing wads preparatory to extraction; removes some dirt, leaf trash, etc.

(4) First rough-cut extraction and/or stick removal—for removal of burs, sticks, stems and some leaf.

(5) Second-Stage Drying—for removal of excess moisture in fiber.

(6) Second Cylinder Cleaner—for removal of leaf and small sticks. We call it a finishing seed cotton cleaner.

(7) Distribution—for dividing bulk seed cotton flow into small streams for final cleaning and ginning.

(8) Feeder Cleaners—finishing extraction, cleaning and fine feed control to gin stands.

(9) Gin Stands—separation of fiber from seed, cleaning in huller fronts and moting.

(10) Lint Cleaning—for removal of pin and pepper trash.

(11) Packaging.

In a tandem saw-cylinder lint cleaning test we have shown a clear picture of the grade improvement accomplished by the addition of seed cotton cleaning and lint cleaning. Step by step, this machine-picked cotton was

raised from strict good ordinary to strict low middling. The simple gin producing the S.G.O. cotton consisted of large unit extractor feeders with heat applied and gin stands. This is about equivalent to the standard gin of the pre-war era.

The addition of one saw lint cleaner added almost a full grade improvement to a low middling. The grade index of 84.2 representing representing nine samples treated in this manner is just under the L.M. index value of 85. A second lint cleaner raised the average to 88.1 which is well above the L.M. level.

When a full tower dryer and 13 cylinders of cleaning was added to the equipment in the test a big grade improvement was made. The index was raised to 94.9 which is over S.L.M. Total grade improvement to this point represents almost two full grades. On 1957 loan values, the gross improvement is some $27.50 in bale value to the farmer. Losses in bale weight due to moisture and trash removal reduced this figure to around $17.00. This is still a substantial amount and is the reason farmers demand the services afforded by modern gins.

Further tests were conducted on machinery consisting of: (1) full tower dryer; (2) seven-cylinder inclined cleaner; (3) burr machine; (4) full tower dryer (two 14-foot in parallel with split feed); (5) 13-cylinder cleaner; and (6) large extractor feeders. This combination of machinery is the maximum considered effective for even the roughest machine-picked cottons. An examination of graphical results shows why. Increases in grade index are small compared to those found in previous tests. Grade index increased from 94.9 to only 96.4. It is doubtful that this increase would result in a net profit for the farmer.

Teaching ginners and farmers to accept the fact that there is a limit to which gin cleaning can be effectively used under present market standards is a problem in education. It may also result in a problem for the mills in adjusting equipment and operations to handle modern cottons effectively.

Foreign Matter Content

The effect of various combinations of seed cotton cleaning and drying and lint cleaning on resulting foreign matter content shows an almost perfect correlation with previous results. Foreign matter is reduced from 8.90% with the simple, no lint cleaner set-up to 2.82% with the elaborate and two-lint cleaner set-up. The big improvements were made when going from the simple to the moderate systems and from none to one-lint cleaner.

The effect of the various combinations on neps shows one reversal in results. This reversal appears in the case of the moderate combination with one lint cleaner which gives a slightly lower nep count than the simple set-up with one. Neps were measured with the nepotometer and were also counted per 100 square inches of card web (in a five-pound spinning test). In general, however, the nep count increases with each major addition of cleaning machinery. The total increase measured over the complete range by card web count was from 14 to 24. The total measured by nepotometer count was from 8 to 21.

The significance of all this is to further emphasize the point already made that the farmer and ginner are striving to realize the last net dollar available from each bale. The development of the modern gin to include drying,

elaborate seed cotton cleaning, and finally, lint cleaning machinery has resulted from efforts to produce high grades. Machinery and technique changes generally proceed at a rate depending upon the amount of economic pressure exerted. These developments come faster when heavy discounts or high premiums make them more desirable. The development of gin dryers to escape penalties for rough preparation, the addition of seed cotton cleaning to enable the gin to satisfactorily process roughly harvested cottons, and the use of line cleaners to upgrade machine-picked cottons containing large quantities of leaf but otherwise of good quality are perfect examples of human nature responding to ecomonic stimuli.

Unfortunately the grade improvement benefits due to cleanings have been obtained at the expense of slight reductions in fiber and spinning properties. Reductions in trash content were accompanied by reductions in manufacturing waste, a factor definitely on the plus side from the mill standpoint.

The big question is: How can cotton quality be measured fast enough and accurately enough to allow the marketing system to place values on bales which are in line with end-use value? When such an evaluation system is available and used, the ginner will again respond to the farmers' demands that his cotton be processed to produce the top spinning value. At that time the farmer will no doubt also pay more attention to producing top spinning value cottons and harvesting them so as to preserve their inherent properties. Only then can the industry move forward to a better understanding from producer to spinner.

Pastore Presents A Prescription

THE Textile Subcommittee of the Senate Interstate and Foreign Commerce Committee submitted the following recommendations as a basis for halting the textile decline, stabilizing production and employment, and permitting future growth of the textile industry.

First: We recommend the establishment of a permanent interagency committee within the Department of Commerce to deal exclusively with textile affairs. This committee should consist of representatives of the Departments of Agriculture, Commerce, Defense, Labor, State and the Treasury.

It should also include representatives of the International Co-Operation Administration, the Office of Civilian Defense Mobilization and the Tariff Commission. The chairman of the textile interagency committee should be the Assistant Secretary of Commerce for Domestic Affairs. To assist the textile interagency committee, we recommend that there be established an Advisory Committee to consist of three representatives of textile management, three representatives of textile labor, and three representatives of the public at large. In addition; we recommend that at each session of Congress there be appointed a Textile Subcommittee within the Committee on Interstate and Foreign Commerce to work closely with the textile interagency committee and the advisory committee.

Second: We recommend that there be instituted within the Department of Commerce a program to improve on the collection and analysis of statistical data which will assist textile management to solve some of the problems internal to the industry.

Third: We recommend that quotas be established which will permit foreign producers of textile products to sell in our markets within limits which will not further endanger existing textile capacity. Furthermore, we recommend that the quotas be established by specific categories of textile products so that no one branch of the domestic textile industry will feel the full impact of imports from abroad.

Fourth: We recommend that agencies responsible for the administration of our foreign aid program make a careful study of the long run consequences of further expansion of world textile capacity before additional grants be made to other countries to expand their own textile production for the international market.

Fifth: We recommend more realistic interpretation of the current peril-point provision of the Trade Agreements Act and faster action on escape-clause cases brought before the Tariff Commission.

Sixth: We recommend that some proportion of custom duties collected on textile products entering the U. S. be used to finance research—especially basic research designed to find new end-uses for textile products, and economic research which will aid the industry in planning its future production program.

Seventh: Depreciation rates on textile machinery now in effect are obsolete. We recommend that at the earliest opportunity the Internal Revenue Service issue a revised schedule of depreciation rates, taking into account current industry practices which would permit a more rapid write-off of new equipment for tax purposes.

Eighth: We also recommend that the Finance Committee carefully study the relevant provisions of the Internal Revenue Code, with a view toward revision to protect against abuses under the loss carry-forward and carry-back provisions which now are often used by financial speculators to liquidate mills which could be operated successfully.

Ninth: We recommend elimination of the two-price system on cotton. If is it not feasible to eliminate immediately the two-price system on cotton, we recommend that tariffs on imported cotton products be increased by an amount equal to the difference in cost between foreign-produced and domestically produced cotton products resulting from the two-price cotton system.

Tenth: Finally, we recommend that the Foreign Assets Control Division of the U. S. Treasury Department review its policy toward the importation of partly processed textile fibers from countries with which we do not now maintain normal trading relationships. This policy has been inconsistent and discriminatory. It has allowed finished products made from these fibers to enter the American market, but has prohibited domestic textile manufacturers from purchasing such partly processed fibers from Western European countries, at the cost of many domestic textile jobs.

An Improved Conversion Of The Saco-Lowell Sliver Tester To Electrical Recording

By HERBERT R. COPELAND, Southern Regional Research Laboratory, New Orleans, La.[1]

This paper discusses the theory, improved design and mechanics of a method for converting a Saco-Lowell sliver and roving tester to an electrical recording system. Considerations which led to the improved conversion are outlined and discussed.

THE uniformity of cotton sliver and roving is a criteria of the quality of these products. With the textile industry striving to produce higher quality yarns, numerous methods have been reported for rapidly evaluating the uniformity of sliver and roving. A popular instrument for this purpose, and especially for use with sliver, is the Saco-Lowell[2] sliver tester.

The Saco-Lowell tester is a sturdy, mechanical type instrument whose measurement of sliver uniformity is not significantly influenced by moisture content or shape factor of the sliver. Maintenance and adjustment are easily handled by a competent mechanic. The tester graphically records in thousandths of an inch the cross-sectional variations in a continuous length of sliver or roving. This is accomplished by compressing the test sample between a square grooved positively driven roll and a freely rotating mating roll attached to a dead weighted lever geared to a moving pen arm. A capillary ink pen mounted near the end of the moving arm traces a permanent record on a ruled strip chart. The tester is driven by an electrical motor which maintains a sample speed of one yard per minute.

Several years ago, a standard Saco-Lowell tester was converted to electrical recording at the Southern Regional Research Laboratory (A, B). The instrument has proved to be very useful in the laboratory's textile research program and appears to have merit for use in textile mills and other research laboratories. The advantages of the electrical method over the graphic method are two-fold: speed and accuracy.

Experience with the converted sliver tester has shown that a skilled calculating machine operator can copy the totals from the counters and compute the mean, standard deviation and coefficient of variation of sliver uniformity in about two-thirds of the time required for measuring the points on a strip chart and making similar statistical computations. Using resettable counters would further decrease operator time for this method.

With electrical recording, a larger number of sample points are available for statistical treatment. The standard chart system uses 30 points in 30 inches of sliver from which to compute the "average variation per inch," and 20 pairs of high-low points in 20 yards of sliver to compute the "average maximum variation per yard." The electrical counters provide up to 1,440 points for determining the uniformity. Moreover, the variable of operator judgment in measuring a graphic record is eliminated.

In changing the Saco-Lowell sliver tester to the electrical system, the instrument's chart recording system was removed. An electrical contact replaced the inking pen. The strip chart was replaced with a calibrated commutator comprised of 30 segments. A variable rate timer provided a means for selecting measuring increments of $\frac{1}{2}$, 1, 2, 4, 12, 18 and 36 inches of sliver and roving. With this arrangement, it was possible to measure from 1 to 720 points in a 20-yard sample. To record the measurements of variation, a cabinet containing 30 electrical counters was employed. The tester was also equipped with a yardage counter and an automatic stop motion which could be adjusted to the desired number of yards to be tested.

An investigation (C) was then conducted to determine the optimum length and number of incremental measurements to be recorded for a good evaluation of sliver uniformity. Twenty consecutive one-yard specimens[3] with 36 observations per specimen were selected as providing the

1. One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture.

2. Use of a company and/or product name by the Department does not imply approval or recommendation of the product to the exclusion of others which may also be suitable.

3. Specimen—"a portion of a material upon which a test is performed." A.S.T.M. D123-55.

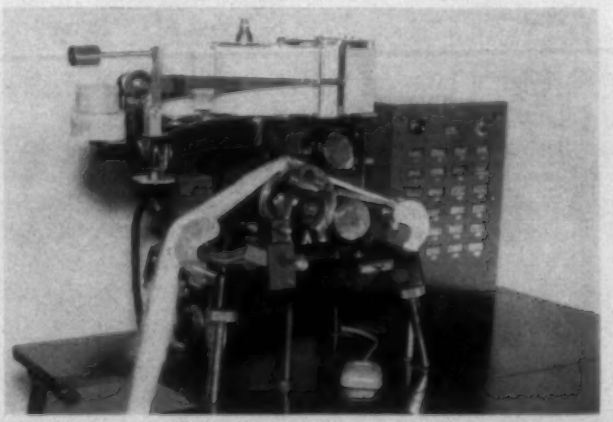

Fig. 1—Front view of sliver tester converted to electrical recording.

desired measure of short-term uniformity. This paper reports recent electrical and mechanical improvements which have increased mechanical reliability and decreased the cost of converting the tester to electrical counting.

Improvements

For precise timing of 36 incremental measurements in a one-yard specimen, the tester now employs a gear drive unit, mechanical frequency timer, clamping actuator cam, and an automatic stop motion geared through a clutch to the tester's calibrated grooved compression roll.

In the original conversion of the sliver tester (A), the pen arm contact occasionally landed on the insulator between two commutator bars thereby influencing the number of measurements recorded. To overcome this difficulty, the new model incorporates a V-grooved indexing bar secured adjacent to the commutator, an indexing roller pin mounted on the pen arm facing the indexing bar and an oscillating plate that momentarily clamps the pen arm at the required recording intervals.

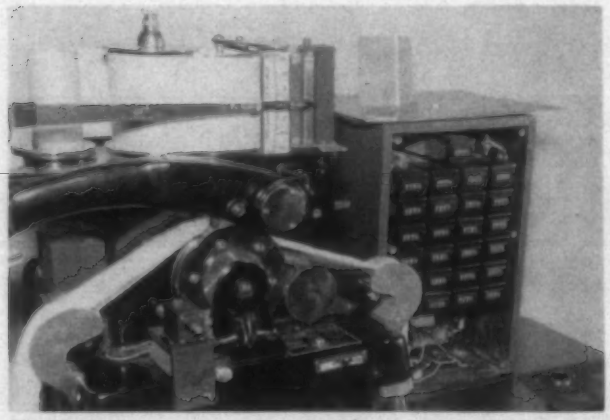

Fig. 2—Sliver tester with the oscillating plate and front panel removed.

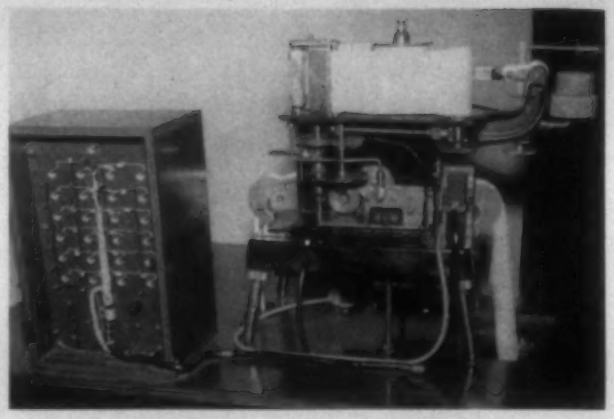

Fig. 3—Tester's gear unit and associated parts.

Thirty counters were used in the original design, however experience has shown that the uniformity of the sliver can be satisfactorily recorded with a range of 24 counters. Twenty-four d.c. low voltage counters of small size and long life expectancy were substituted for the a.c. type counters of the earlier machine. Resettable type counters are highly desirable for this application, but were not used because of their large size and cost. The new counters required a 24-volt d.c. supply, which was obtained with an a.c. selenium rectifying circuit incorporating a current limiting resistor.

In both the original and the present design, a master counter is used for comparing the total number of incremental measurements taken along the length of the specimen with the total number recorded. This also can be used as a method for determining specimen length.

The recording chart assembly on the sliver tester was not removed, so that both graphically and electrically recorded data are available. Both systems can be operated independently if desired. The new design uses more standard component parts and fewer alterations to the basic instrument than the previous model.

Fig. 1 presents a general view of the modified Saco-Lowell sliver tester. The starting switch is on the table.

SLIVER TESTER

Card ☑ 1st. Drawing ☐ 2nd. Drawing ☐ Roving ☐

Wt. per Yd. 55 grs. Hank —

Master Counter
After Run 557
Before Run 521/36

Processing Date 6-17-58

Line Project No. 521-68 Rack Pin 41 Operator C.A.S. Date 6-17-58

Counter (d)	1	2	3	4	5	6	7	8	9	10	11	12
Mid-Point	.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5
Reading	424	327	655									
Prev. Read.	415	319	654									
f	9	8	1									
fd	4.5	12.0	2.5									
$f(d^2)$	2.25	18.00	6.25									

Counter (d)	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Mid-Point	-.5	-1.5	-2.5	-3.5	-4.5	-5.5	-6.5	-7.5	-8.5	-9.5	-10.5	-11.5
Reading	940	364	354	873								
Prev. Read.	930	358	353	872								
f	10	6	1	1								
fd	5.0	9.0	2.5	3.5								
$f(d^2)$	2.50	13.50	6.25	12.25								

$$S.D. = \sqrt{\frac{\Sigma f(d^2)}{\Sigma f} - \left(\frac{\Sigma fd}{\Sigma f}\right)^2} = 1.30 \qquad \bar{X} = \text{Rack Pin} \pm \left(\frac{\Sigma fd}{\Sigma f}\right) = 40.97$$

$$C.V. = \frac{S.D.}{\bar{X}} (100) = 3.17\%$$

Fig. 4—Form for recording and calculating the data.

Fig. 2 shows the tester with the oscillating plate and the panel covering the counters removed. The indexing bar and the commutator can be seen on top of the tester, and the yardage counter and clutch lever in the foreground. Fig. 3 is a rear view of the tester. The gear driving unit with a mechanically operated electrical switch and a portion of the cam clamping system are shown. A 33-wire cable connects the counters, d.c. supply and relay to the commutator set-up. An example of a typical data sheet is presented in Fig. 4.

Operation

When the tester is in operation, the pen arm with its electrical contact and an indexing roller moves near the surface of the electrical commutator and the V-grooved indexing bar. An oscillating plate momentarily clamps the indexing roller and electrical contact to their respective components at one-inch length increments of the sliver or roving. At each clamping interval a snap switch is actuated mechanically to complete the electrical circuit between the commutator bar and counter. Positioning of the pen arm is responsive in the usual manner to the variation in thickness of the specimen.

As previously stated, the system automatically measures and records 720 points in a 20-yard sample. With this information and the aid of a calculating machine, an operator can quickly compute the average variation, standard deviation and the coefficient of variation. Visual observation of the counters provide a rough estimate of uniformity.

Conclusion

The improved conversion of the tester has been in operation at S.R.R.L. since August 1957. It has considerably improved mechanical and electrical reliability and lower maintenance characteristics over the previous model. Full details and engineering drawings of the conversion are available without charge from the Southern Regional Research Laboratory, P. O. Box 1307, New Orleans 19, La.

Acknowledgement—The author takes pleasure in thanking Ralph A. Rusca for his guidance and encouragement.

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(C) Simpson, J.; Landstreet, C. B.; Corley, J. R.: *Textile Research Journal 22,* 42 (1952).

Belfast License Granted To Bradford

Bradford Dyeing Association, Westerly, R. I., has been granted a license by Deering Milliken Research Corp. to process its non-resin, no-iron wash-and-wear cotton fabric, trademarked Belfast, according to an announcement by Ernest J. Chronyei, executive vice-president of Bradford. Belfast fabrics are the product of a permanent modification of the cotton fiber which is said to make them self-ironing for the life of the fabric. They are washable by hand or by automatic machine including cycle, spin or tumble dry, are non-chlorine retentive, and have built-in resistance to degradation caused by chlorine bleaches.

T. O. E. G. Members Discuss Current Slashing Practices

Question No. 1—Speaking of high speed slashing, please relate your experience with moisture controls, difference in size pick-up on multi-cylinder slashers using two size boxes, and selvage ends running out and in at high speeds. Please state: (1) type squeeze rolls; (2) slashing speeds; (3) yarn numbers and total ends; (4) experience on maintenance; and (5) shedding control.

Mill B: We have a good bit of trouble with selvage ends running out and in. They also tend to become slack between the two squeeze rolls. We have found that most of this is caused from section beams having high and low selvages. This causes the ends to enter the size box slack. The situation can be remedied by decreasing the speed of the slasher; however, this causes loss of production and defeats the purpose of installing high speed slashers. We have rubber covered squeeze rolls and run them at a pressure of 15 to 22 p.s.i. Our yarn counts vary from 7.00s to 16.00s and total ends run from 1,128 to 5,600. Our slashing speed is from 40 to 85 y.p.m. depending on the weight of the warp. We have no trouble with ends rolling on loom beams. We run a maintenance check on our multi-cylinder slashers once per month looking for anything that could cause a major breakdown. We also clean the hoods, pack size box journals, clean and oil friction, and grease and oil the whole slasher.

Mill D: We have two hot air slashers and two four-can slashers that are run at high speed. We have not experienced difficulty with moisture controls. We run ten pounds pressure on the dresser roll and 20 to 40 pounds pressure on the squeeze roll depending on the desired size pick-up. Our narrow hot air slashers run from 80 to 105 y.p.m. Our wide hot air and can slashers run from 50 to 85 y.p.m. On the hot air slasher, warps of 3,180 ends of 31s are run at 105 y.p.m. We do not have trouble with ends rolling on the loom beam.

Mill G: We have no particular difficulty with moisture controls. We have from 1 to 2% difference in size pick-up when using two size boxes. We have trouble with ends running out and in when slashing at high speeds. We have rubber squeeze rolls on back and yarn wound on front. We run 31s warp of approximately 4,000 ends at 100 y.p.m. on a multi-cylinder slasher. We had trouble with ends rolling on loom beams but corrected this by adding two 1" rollers between the back and delivery rolls. Our yarn counts run from 12s to 40s. We use preventative maintenance check lists each week to check all moving parts. We have a shedding problem on our high speed slashers but do not have an answer.

Mill H: We are running hot air slashers and have had some trouble with moisture controls. Our only solution, so far, has been to run slashers on manual control on heavy sets. We did have trouble with ends rolling on the loom beam (running 6,000 ends of 14s warp yarn on a 72" beam) but helped the situation by going to a finer dent reed. Our maintenance cost has increased on our hot air slashers. We have had trouble with Teflon coating coming off rollers and also finding a good grease for rollers inside the oven. Our only control on shedding is the use of lease rods at the front of the slasher.

Mill L: We do not have trouble with moisture controls other than getting out of adjustment. This is corrected by recalibration. We do feel that they do not control close enough or react fast enough. We run warps of 2,800 to 5,800 ends of 13s to 25s warp yarn at speeds between 50 and 80 y.p.m. Warps of 4,000 ends of 31s warp yarn are slashed at 75 y.p.m. We do not have trouble with ends rolling on loom beams unless the beams have bad heads. We think that multi-can slashers require about 75% more maintenance. Shedding is a problem that we have not solved although we feel that proper size formulas, squeeze rolls and roll pressures will help.

Mill M: We have not experienced difficulty with moisture controls on our high speed slasher. We find that when running two size boxes, if they are identical types and are adjusted the same way, that there is not any difference in the pick-up. Our squeeze rolls are yarn covered. We run a 2,562 end warps of 9s yarn at 70 y.p.m. A speed of 50 y.p.m. is run on sets of 5,600 ends of 16s warp yarn. We do have some rolling of ends on the loom beam.

In respect to slasher maintenance, we have a combination twister and slasher fixer. Our standards department issues

Slashing practices were the main topic of discussion at the Fall meeting of the Textile Operating Executives of Georgia held in November on the campus of Georgia Tech, Atlanta. Members discussed high speed slashing, automatic brakes on section beams, pneumatic squeeze roll pressure, C.M.C. size, and method of holding yarn when starting up a new beam on the slasher.

maintenance reports covering each machine in the department. Each week, the fixer checks the machine completely as indicated by the pre-set maintenance report. These reports are then returned to the standards department and proper notation made in our perpetual maintenance records.

Mill R: We have three 10-can slashers. We find no more difficulty with selvage ends rolling out and in than with low speed slashers. There is a difference in the amount of size picked up when using two size boxes. We use yarn wound squeeze rolls. Our slasher speed on a set with 5,534 ends of 26s is 95 y.p.m. We have no trouble with ends rolling on the loom beam. We have heavy duty head ends with traversing press roll and pneumatic beam compressor. We use 26" diameter beams with 50" between heads for 4,609 ends of 14.25s. We think that shedding can be helped by keeping size fresh, keeping yarn wound squeeze rolls in good condition, and keeping size temperature 206° or higher in the size boxes.

We do the following maintenance on multi-can slashers: (1) clean and oil all roller chains once weekly; (2) grease can bearings once weekly; (3) grease size box squeeze roll bearings once weekly; and (4) grease delivery roll, contact roll and guide roll bearings monthly.

Mill U: On sets of 4,642 ends of 30.75s yarn we slash at 60 y.p.m. on hot air slashers. To combat ends rolling on the loom beam we added a roller over the sheet and under the sheet between the first size box and the first roll. These rolls were mounted on a pivoting frame with weight arms and weights to keep them pressed against the warp sheet. This is on a hot air slasher and over a wide assortment of warps.

Question No. 2—What is your experience with automatic brakes on section beams? What per cent stretch do you run from back section beam to the loom beam? How do you control stretch on large section beams?

Mill A: We get 1.75% stretch from the back section beam to the loom beam. The total number of ends per loom beam varies from 700 to 4,812 and the number of section beams in the creel varies from four to 12. Yarn is 31s and 26s. The section beam is 26" diameter with 54.75" between heads. The beam barrel diameter is 10.1".

Mill D: We have automatic brakes but do not use them because the beam run out is uneven due to the brakes staying out of adjustment. The beams can be stopped without kinking but a lot of ends are broken. We run 38" beams with positive weights. On narrow slashers with five to ten section beams we run 1.5% stretch from the back section beam to the loom beam (13s to 34s yarn with 1,750 to 4,390 ends on 38" beams). On wide slashers we run 1.8 to 2.0% stretch with nine to 22 section beams (9s to 34s warps with 4,000 to 10,500 ends). Our section beams have ball bearings. We control the stretch by taking weights off beam frictions as the set runs down.

Mill G: We try to maintain from 1½ to 2% stretch on 16-beam sets.

Mill J: We run 1.5 to 2% stretch on eight-beam sets.

Mill L: We have automatic brakes on our section beams but have seen no improvement in stretch control or evenness of beam run out. Kinking ends on stopping can be avoided if brakes are kept in excellent condition. We run 2.5% stretch on warps of 5,800 ends of 25s yarn with 30" section beams.

Mill N: We run from 1.5 to 3% stretch on our slashers. The number of section beams per set varies from four to 19. Our warps are mostly wet beam dyed yarn. The total ends vary from 172 to 6,300. Yarns vary from 16s to 20s singles and 2/2 to 60/2. We have 36" diameter section beams. We run rope frictions on our beams and take off weights as the set runs down. We use ball bearings in the section beams.

Mill T: We run approximately 1½ to 2% stretch on our warps. We have 30" section beams and run yarns of 10s to 20½s. The number of ends per warp varies from 334 to 3,957.

Question No. 3—Do you vary squeeze roll pressure on pneumatic loaded rolls when changing from low sley to high sley goods? What are the advantages of pneumatic loaded squeeze rolls and how do you control size pick-up when double size boxes are used?

Mill B: We increase our pressure on pneumatic squeeze rolls when running heavy sets. We run 15 to 22 p.s.i. Roller weight is 500 pounds. We thus increase the total weight from 650 to 720 pounds. Variation in size pick-up is not noticeable. We find that there is a certain point beyond which any further increase in roll weight will tend to squeeze size out of warps, lowering the pick-up. The most important advantage in using pneumatic rolls is that you have better size pick-up and they are easier on the slasher tender.

Mill D: Size pick-up, when using two size boxes, can be controlled with roller pressure. In extreme cases the size formula can be changed. We use open coils in our size box with 15 pounds steam pressure.

Mill G: We find the most important advantage of pneumatic loaded squeeze rolls is a more uniform sizing. We control size pick-up by changing our formula. We use open coils in our size box with a pressure of 12 pounds.

Mill L: The principal advantage of pneumatic loaded rolls is that they are more versatile for variation in yarn numbers, sley and formulas. To vary size pick-up we adjust the size formula or squeeze roll pressures. We run 15 pounds steam pressure in our open steam coils in the size box.

Mill N: We vary our pressure on pneumatic loaded rolls when changing from low to high sley goods. We use 250 to 325 pounds added pressure on sets with 64 ends per inch, and 16s and 14½s yarns. On sets with 20s yarn with 32 to 34 ends per inch we use 750 to 825 pounds added pressure. The higher pressure cuts size pick-up about 2%. We get around 11% with 250 to 325 pounds pressure and about 9% with 750 to 825 pounds pressure. The advantage of pneumatic loaded squeeze rolls is seen from not having to use so many size formulas. We run 50 pounds steam pressure in our open size box coils.

Question No. 4—What is your experience with pneumatic loaded synthetic squeeze rolls?

Mill G: We find synthetic rolls will stand up under more added pressure than blankets on high speed slashers. They also give a more uniform size pick-up. We use 450 pounds added pressure.

Mill L: We prefer pneumatic synthetic rolls over blanket

covered rolls because we think synthetic rolls give a more uniform coating. We experience some difference in size pick-up. Our size rolls have stood up under pneumatic loading. We use 150 pounds added pressure on the synthetic rolls.

Mill S: We get less variation in size pick-up using synthetic covered rolls. Blanket covered roll pick-up varies as the cushion on the roll decreases from new blanket until replaced with another.

Question No. 5—Please give your experience using C.M.C. size.

Mill Q: We find under our test conditions that 20/1 and 30/1 carded and combed yarns require less starch-CMC size than starch size to give equal performance. Comparing the per cent shed as obtained in tests with the Southern Research Institute shed tester, we find: starch-CMC-O = 0.65%; and starch = 1.0% shed. We indirectly evaluate the weaving efficiency of sized yarns by conducting Walker yarn abrasion tests. In these tests the yarn abrades against itself and the number of strokes required to break the yarn is recorded. For starch-CMC sized yarns, we find 50 strokes and starch 64 strokes is required to break the yarns. The above three comparisons were made on size baths with the same total solids content. The starch-CMC size contained two parts starch for every one part CMC.

Question No. 6—When starting yarn on loom beams at the slasher do you: (a) tape yarn to beam barrel? (b) use a stick in the slot in the beam? (c) wrap the yarn around the beam?

Mill A: When starting yarn on loom beams at the slasher we wrap the yarn around the beam. The ends have been stripped across the width of the warp with gummed paper tape. Waste at warp run-out is 0.07% of the weave room production.

Mill B: We use a stick in the slot of the loom beam to hold yarn when starting a new beam. We tried sticking rough surface tape on beams but were were not successful with it. The tape would hold the yarn but had a tendency to twist and slip on the beams. Waste percentage of warp run-out on the loom is 0.2%.

Mill D: We wrap the warp ends around the beam barrel when starting up on the slasher. We make about two yards of waste at run-out of the loom beam.

Mill E: We catch the yarn between two ¼x¾" pieces of flat iron and give it one complete turn. These pieces of flat iron are placed in hooks that are fastened to the loom beam. The beam is recessed for the hooks and flat iron slats. In running off the beam, these slats run up to the drag rolls of the loom. Theoretically, this eliminates waste caused by run-out because all the yarn that is left is needed to hold the pattern together.

Mill G: We use a stick in the slot of the beam.

Mill H: We wrap the yarn around the beam barrel.

Mill J: We use a stick in the slot of the beam barrel. We make about three yards of waste or 0.4% at the warp run-out.

Mill M: On rayons and nylons we tape the yarn to the beam barrel. On cotton we use a loom beam stick.

Mill N: We use Safety Walk tape on beam barrels which proves very satisfactory on loom beam start-up. Warp run-out waste is from 0.0025 to 0.005%.

Mill R: We use the spline stock in a groove method to

hold warp yarn when starting up a new beam on the slasher. We have 32" of waste left on the warp after the pattern has been leased out.

Mill S: We use Safety Walk which is one inch wide on our beam barrels (both wooden and metal). There is no slippage. The Safety Walk is easy to apply coming with adhesive under a protective paper which is peeled off prior to pressing against the barrel. Our warp waste at the loom averages 0.12%.

Mill T: We use a stick in the beam slot when starting a new warp. Our loom beam waste at warp run-out averages 0.16%.

The LOOMFIXER And His Job

By WILMER WESTBROOK

THE settings of the picker stick and its connections have a lot to do with the over-all efficiency of the loom. The picker stick is a third class lever with the parallel motion as the fulcrum, the lug as the power, and the picker as the resistance.

Good, straight picker sticks should be selected. A cheap stick is poor economy because it will warp or break after it has been in service only a short time. Sticks of seasoned, straight-grained hickory are the most widely used, but treated, plyed and laminated sticks are also available and have a much longer service life than the regular hickory sticks.

Extra Assemblies

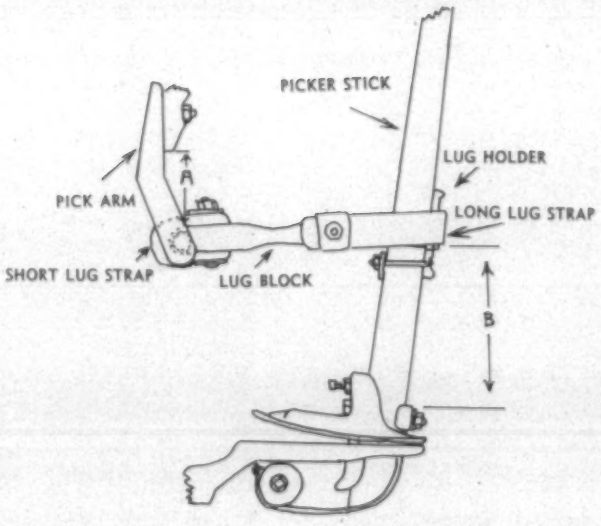
Many of the old-time loomfixers kept a pair of spare parallel motions at the workbench. During their spare time they would disassemble the motion, discard the old stick and clean the parts with a solvent. The parallel foot, shoe, tongue, block, spring, spring case, heel strap, screws and bolts would be closely examined and replaced as needed. Then the entire motion, complete with a new picker stick, would be reassembled and held until it was needed. The entire assembly could be removed and replaced faster than the stick alone and with this method all the parts were kept in good condition and the work could be done with a minimum of loom down-time.

Leather Can Be Re-Used

The heel strap should be made of good, strong leather. Many loomfixers use old belting, checkstraps or binder leather to make the straps. Leather that is brittle and weak with age should not be used. The lug holdup or power strap is often made of leather or else has a leather backing. It can be fashioned from old checkstraps or other used leather items. The aluminum or alloy metal lug holders are becoming standard in many mills. These holders are attached to the picker stick with U-bolts or clamps.

Part Three

The picker stick and its connections cannot be set to as close tolerances as many other parts of the loom. The loomfixer must use his skill and experience to get just the right amount of power to pick the shuttle across the lay.



The picker stick is a third class lever. Measuring points *A* and *B* are for the regulation of the power and the stroke. See Table 1 for average settings.

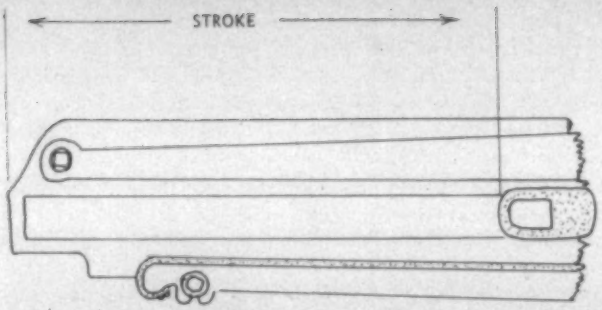
Among the advantages of the metal holders are their ease of application, absence of holes and screws in the stick that weaken it, ready adjustment, and their reinforcing value at a crucial point of strain or wear.

When the lug is attached the short lug strap should fit snugly on the pick arm. There should be no play between the lug block and the arm but it should not bind.

When the rule-of-thumb method is used to set the lug, have the pick ball resting on the lowest point of the pick cam. With the picker stick all the way back against the

Pick Arm	Size Loom	A	B
Short	22-26	2⅜	8
	28-34	3	7¾
Medium	36-42	3 7/16	7½
Long	44-50	4½	7¼
	52-56	4⅞	7¼
	58-60	4⅞	7
XD	44	2½	7½
XD	50	2¼	7¼

Table 1—Settings given are in inches and are for X, XD and XK looms under average operating conditions.



The stroke of the picker stick is the distance from the outer edge of the lay end to the picker stick, with the pick ball on the high point of the pick toe.

lay-end strap, have a clearance between the long lug and the lug holder the width of a finger. Now here's the catch to rule-of-thumb settings—some people have bigger thumbs and fingers than others!

The best way to set the lug is to turn the crankshaft until the ball is resting on the high point of the pick toe. Pull the picker stick forward until it reaches the length of stroke recommended for the particular model and width of loom, take all the slack out of the lub assembly and tighten the long lug strap.

When the pick arm or the lug is moved up or down it will affect the length of the stroke, so this setting should be checked whenever other adjustments are made.

A recommended height of the lug and length of the pick arm is prescribed by the manufacturer for each model and width of loom. However, these settings cannot be rigidly maintained and the loomfixer must have the experience and skill to make the loom operate efficiently and keep all these settings within close tolerances.

As a rule, the lug should be placed as high on the picker stick as possible and still give enough power to properly pick the shuttle across the lay. Remember, too, that on the filling change some extra power is needed, especially from the left-hand side of the loom. So when the power of the pick is checked, always cause the loom to change filling two to three times to be sure there is sufficient power to properly seat the shuttle and overcome the drag of the filling changing mechanism.

Regardless of the height of the lug or the length of the pick arm, they should be set so that the lug slants

Size Loom	Stroke
22-26	6¾
28-30	7
32-36	7¼
38-42	7½
44-46	7¾-8
48-52	8¼-8½
54-60	8¾-9
XD 44	7½
XD 50	7½

Table 2—Length of stroke shown in this table is for X, XD and XK looms operating under average conditions. Stroke is in inches.

upward slightly toward the picker stick. If the lug is level or slanted down toward the stick, it will have a tendency to ride upward and kill some of the power of the stroke.

Adjust the parallel spring so that it will have enough tension to pull the stick back against the checkstrap but not enough to pull the strap through the adjusting fingers. A spring that is too tight will counteract the braking effect of the checkstrap but a weak spring will cause the shuttle to bounce in the box. It must have just the right amount of tension for best results.

Although most parts of the loom can be set precisely with the use of rules and gages the picker stick and its connections must be allowed some slight tolerances. The standard settings will be correct in the majority of cases but the know-how of the loomfixer must be brought into play to make allowances in the settings as needed.

Bleaching, Dyeing & Finishing

The Role Of Organic Chemicals In Textile Finishing

By WILLIAM C. CALDWELL, President, Wica Chemical Co., Charlotte, N. C.

THE textile finisher is concerned with modifying his goods to add stiffness, softness, durability and weight. He is concerned with shrink resisting; crease resisting; flameproofing; and water, oil and soil resisting properties. He is concerned with finishes that resist bacteria, moths and static electricity. The finisher proceeds to render the fabric acceptable to the ultimate consumer.

A portion of the finishing operations depends entirely on the physical properties of the fibers and of the fabric construction. These mechanical aspects may be applied in conjunction with coating or impregnating applications of chemical finishing agents that adhere to the fibers to achieve special results. The finishing operation might involve a chemical process to modify the fibers.

There are many considerations the textile chemist must make regarding the proper selection and use of the chemical tools he has available. The industry recognizes a series of tests which have been adopted as standards by the American Association of Textile Chemists & Colorists. In some instances, the overwhelming desire to attain specific properties of a fabric will possibly cause reason for a compromise of other specifications.

Fabric Tests

The finisher is very much aware of the effects his chemicals and processing conditions will have on the finished fabrics, especially in anticipating that the goods might be submitted to the following tests: (1) hand produced; (2) shrinkage control; (3) crease resistance; (4) durability of finish to multiple washes; (5) effect on dyed shades; (6) light fastness; (7) tear strength; (8) tensile strength; (9) abrasion resistance; (10) seam slippage resistance; (11) sewability; (12) needle cutting; and (13) chlorine resistance.

The use of organic chemicals in textile finishing has been going on since Charles MacIntosh applied an India Rubber treatment to fabric and made a raincoat back in 1824. How has the use of organics grown and what are their present applications? This paper outlines these facts and tells what a finisher looks for in a chemical finish for textiles. It was first delivered before the Chemical Market Research Association, February 18-19, in Atlanta, Ga.

High cost factors, compatibility problems, handling and processing hazards, discomforts, skin rash effects and inadequate processing facilities—in addition to failure to pass the above tests—may restrict the use of an otherwise good finishing chemical. Possibly, formaldehyde is one of the most classic examples of such an "otherwise good finishing chemical." As far back as just after the turn of the last century, this use chemical was known to permanently modify certain properties of cellulosic materials. It has never been accepted to any great degree because of several obvious reasons:

(1) Objectionable and irritating odor in plant use; (2) toxicity of high concentrations in air; (3) variations of the results obtained; and (4) excessive embrittlement of fiber.

Urea

Later, the Germans found some vast improvements with formaldehyde treatments of cellulose by mixing with urea or guanidine. Then the English made some simple condensates of urea and formaldehyde. The Tootall Broadhurst Co. pioneered the use of water soluble UF resins for stabilizing, crease-proofing and stiffening cotton, linen and rayon fabrics.

The introduction of these resins in the U. S. was made early enough to be recognized as "flourishing" during the mid '30s when our rayon industry was well into its own. The two types of resins originally introduced to this country included a monomeric type (low formaldehyde and urea ratio) and a polymeric type which is also water

soluble but has been deliberately reacted to a polymeric state. The monomeric types penetrate, or are diffusible in the fibers. They are very inefficient on a solids basis compared with straight formaldehyde and are usually applied to rayon fabrics to deposit from 12 to 20% fixed resins. The polymeric types produce hand and increase bulk and stiffness of rayon fabrics. Some use in stiffening nylon is noted.

It is significant that these two simple methylol ureas, as originally introduced to this country, still account for almost a third (by weight) of the entire 60 million plus (dry) pounds of thermosetting resins in U. S. textile finishing. The monomeric type, supplied as a 30 to 55% paste or cream, has sold for as little as seven cents per wet pound, delivered to the mill in drum truckloads. Its price history shows the resin has sold for as much as 16 cents per wet pound during good years. The syrupy polymeric type has ranged in price from 12½ cents to 30 cents per liquid pound, as 30 to 70% solids.

The methylol ureas looked good and were widely accepted in rayon finishing. The problems invariably encountered with straight formaldehyde were mostly overcome. However, the finisher found himself living with some problems of poor resistance to multiple washings, progressive shrinkage, poor product storage stability, lack of durability in glaze finishing of cottons and high retention of chlorine in bleaching operations.

Melamine Resins

As always, the industry was in need of improved finishing materials and much research work was done in efforts to overcome these inherent disadvantages of U. F. The melamine formaldehyde resins were the first new major class of resins to be developed and exploited to supplement the methylols. The durability of the melamines partially overcame their relatively high costs and cotton goods—especially in glazing operations—offered a very good outlet because the older urea resins were generally unsatisfactory. Too, the increasing research activity and promotion done in cotton's behalf had a great effect upon their acceptance. The consumption of melamine and modified melamines currently is of the third greatest importance in dry pound volume, or about 20% of the entire thermosetting resin output for textiles. Patent protections have limited the manufacture of melamines.

The Germans spent their largest effort during the second world war using straight formaldehyde in treating their all-purpose fiber—rayon. Perhaps this is another example of the "plumb-line," although it's understandable that they were forced to use what they had available. Urea is highly reactive and very low in cost. We naturally expect to see the majority of resin research done with urea involved.

Many improvements of the U. F. resins were made in many countries. Developments in Germany, Japan, England and the U. S. include formaldehyde derivatives of ethylene urea, acetylene diurene resins, urons, methylated ureas and triazones. Any variation from the low cost urea and formaldehyde affects the costs sharply.

In considering that the ethylene ureas occupy a volume position today that is second only to the original methylols—what has taken place in the last few years to move this class up from one to two million pounds annual consump-

tion to more than 15 million pounds? Recently, ethylene ureas sold for about 30 cents per wet pound and were controlled by three (possibly two) companies whose positions were established with the ethylene urea intermediates. Today, there are many suppliers at prices reported to range well below 20 cents, liquid. The wash-and-wear formulations for cotton finishing have given this chemical a good boost in volume requirements. Its resistance to chlorine allows for less washing instructions.

Wash-and-wear is commonly called the phenomenon of the day. The largest yardage of the goods with wash-and-wear characteristics finds an outlet in the field of men's and boys' wear, women's dresses and children's wear. Surveys show wash-and-wear shirts for men and boys represent from 25 to 60% of total shirt sales. A child's dress with wash-and-wear will outsell an untreated garment by as much as three-to-one, even at prices from one to two dollars higher.

Our company has been associated with wash-and-wear since its beginning. Our staff has prepared countless wash-and-wear recipes, of which many were acceptable to the buying public. We do not, however, in any degree, believe the consumer absorbs all that is written on the tags and labels. Those magazines of specific interest to the homemakers, and particularly those that have departments staffed with highly qualified textile chemists, are doing a great job in creating more quality consciousness in the consumer fields. The consumer is more often "calling the shots." The textile chemist is closer to the consumer than ever before.

Water Repellent Finishes

Somewhere between 50 and 70 manufacturers and compounders seek to supply water repellent finishes to the 10 to 13 million pound market in the textile field. Charles MacIntosh became famous with an India rubber treatment for raincoat fabric back in 1824. The name "MacIntosh" became associated with good rain apparel. Even now, the original "MacIntosh" label appears all over the world in the lightweight coats. Only the name is the same, the goods have been improved all along, as we can experience air permeable comfort in wearing them.

The early waterproofing was done with almost any substance that would melt and spread continuously over the fabric. Asphalt, wax and pitch must have offered limited comforts. Continuous or impermeable coatings of many types of film-forming materials are used on fabrics of woven and knitted construction, as well as on nonwoven goods. Lightweight tarpaulins are being made tough, pliable and almost tear-proof by coating solvent chloroprene rubber on both sides of nylon knit fabrics. Polyvinyl chloride, polyvinyl butyral, cellulose acetate and other materials are being used for continuous coatings for raincoats.

Water resistant finishes are generally regarded as porous and processes for obtaining these finishes were known in the 19th century. The procedures involved passing the goods first through a metal salt solution such as aluminum or lead acetate and a second pass through a solution of sodium soap. The metallic soap formation on the fiber gave water repellency with air permeability. Obviously, the construction of the fabric is an important consideration in all permeable water repellent goods. The single bath method uses a wax-aluminum salt product. This process was known in this country about 1930 and fairly replaced the old two-bath method. The paraffin wax, normally used, is melted and worked into a water dispersion with some colloid, such as glue or gelatin, and homogenized prior to incorporating aluminum acetate or aluminum formate.

These finishes are not resistant to laundering or dry-cleaning and are described as renewable because of the ease in which the clean garment may be reprocessed. The ready-to-use "renewable" water repellent products are 25 to 40% solids in water and sell at prices from 9 to 19 cents per wet pound.

The important quaternary ammonium type was the first durable repellent used in this country and was in process just before World War II. The chemical was designed to break down upon heating and leave a water repellent residue on the fibers. Fatty pyridinium compounds, methylol stearamides with resins, are among those currently available.

Silicones and flourocarbons are relatively new products and have been very well received by processors and the buying public. The silicones (and methylol stearamides) are also used in conjunction with thermosetting resins for wash-and-wear formulations. These materials are very resistant to dry-cleaning.

Softeners

The textile finisher has always had some means available to soften his goods. Early uses of fats, greases and oils were inexpensive. However, the poor properties inherent in their make-up have restricted their use in view of the many stable, synthetic softeners available. These old materials suffered rancidity, discoloration and lack of heat and light resistance. They are generally unacceptable in resin finishes.

Sulfonated tallows, emulsifiable mineral oils, wax emulsions, stearic acid and tallow soaps and other natural greases are still used in huge quantities. Some recipes call for such large proportions of sulfonated tallow that the resultant weight gain on the fabric offsets the costs of the finish. The greasiness of tallows facilitates napping and other mechanical processes.

Sulfonated parafins (reed reaction products) have been used quite extensively for more than 20 years and their position is relatively secure because of the excellent effects produced and resistance to light and heat. Sulfonated fatty alcohols and fatty acid condensates supplement the above items in the anionic group.

Cationic softeners group is comprised with hundreds of variations of substituted ammoniums and amines. The number of possible considerations of the chemicals and fats appears endless.

Nonionic softeners and lubricants are principally polyoxyethylenes and, again, there are no limits to the number of combinations, techniques and modifications. Siloxanes and silicone emulsions occupy a field of their own and no effort is made to discuss them here.

The use of softeners is made in almost any processing plant in at least one or two applications. Estimated consumption in textiles, for all types of softeners and lubricants, appears to be running well over 50 million pounds annually.

Cotton and rayon appear to have received the most attention in this field and the processing chemicals were mostly inorganic. A few chlorinated materials were excep-

tions and a few fairly important organic chemicals are used today. THPC is a process utilizing a phosphorous-formaldehyde derivative reacted with a thermosetting resin. There are several disadvantages reported but it's one of the newest methods and is undergoing extensive study and practical application.

Some current experiments with phosphorous compounds indicate the possibility of a flameproofing finish that will be durable without compromising the hand and strength of cotton and rayon to a great degree.

Rubber Latex

The almost countless means and methods of using rubber latex in the processing of textile and related products make it difficult to describe these elastomeric materials as belonging to a particular field. The manufacturers of transportation and furniture covering cloth, such as frieze and pile fabrics, will usually apply rubber latex to the back of his goods prior to scouring and dyeing. This pre-coating practice applies to much of the scatter rug processing. Another method of application calls for back-coating during the actual finishing operations and the results obtained qualify the backing as a finish.

Much of these materials that enter the textile field do not emerge as such. Take those textile plants that have diverted latex, through their own processing, to the latex foam industry, as an example. Some suppliers of compounded latex have sold wet products that are prepared for use by the foam manufacturers. The many uses of latex in impregnating baths for fabrics, cords and warps—in dyeing and printing of pigments—in supporting nonwoven fabrics—make it extremely difficult to arrive at consumption estimates based on end-uses. It is necessary that we discuss these materials as amounts consumed in processing textiles and related products.

For all practical purposes, the copolymers of styrene and butadiene—such as were identified as GR-S latices—make up the largest volume in use with textiles. There are estimates based on survey and trade report data that indicate from 40 to 60 million dry pounds of GR-S types were consumed by textiles in 1957. Our synthetic rubber industry, as we see it today, was rushed into being as World War II came on and the country found itself fresh out of the imported tree rubber latex.

Patents covering textile latex processes were expiring when most of us were boys but the textile industry has never depended on latex as it does today. The giant tufted rug and carpet industry has grown from its beginning, just after World War II, to the production of about 45 million square yards in 1954, to over 100 million square yards during 1958. This last production figure is based on first half figures of over 50 million square yards and an estimated 8 to 10% increase for the last half of 1958. Unlike woven carpets, the tufted types depend almost entirely upon a good, strong backing that locks the tufts. This material must be fairly flexible and rubber latex satisfies these requirements best with lowest costs. It would have been most unfortunate if such a sizeable field had existed when the natural latex imports were so short at the start of World War II.

Various estimates of the textile consumption of natural latex are from 12 to 20 million dry pounds during the year 1958. Natural latex has the ability to hold large

proportions of clay fillers, and other properties of the film are of interest. The prices are not as stable as synthetics and its ageing properties are more easily influenced. Some users of synthetic latex are no longer concerned with copper contaminations as a result of having judiciously selected compounding ingredients.

The government-supported synthetic rubber program was actually operated on the production level by private business. The facilities were sold in 1955 and the synthetic rubber industry has expanded to include new and additional facilities as well as new producing companies. Incidentally, the government program was concentrated in elastomer production with styrene contents around 50% maximum. High styrene-low butadiene copolymers were continuing to be developed and manufactured by private business.

In addition to these principal latices, there are other recognized elastomers that account for relatively large portions of the over-all textile consumption. Butadiene/acrylontrile latex consumption is estimated in excess of seven million dry pounds. About 250,000 pounds of neoprene latex was used in solvent-resistant coatings and in processing conductor (electrical) cloth in 1957.

Polyvinyl acetate emulsions occupy a very important place, according to the estimated consumption figures for 1957 and some guesses for 1958. The total vinyl acetate monomer consumption for all industries is probably close to 200 million pounds. This is used in vinyl chloride copolymers, butyrals, formals, alcohols and polyvinyl acetate emulsions for paints, textiles, adhesives and chewing gum base. About 10% of the total is exported and textiles probably account for about 15 million pounds.

Textile finishing requires polyvinyl acetate emulsions with properties that might not be found in many products that are made expressly for the paint and other fields. The textile finisher sometimes adds polyvinyl acetate to starch mixes that are cooked to high temperatures and the mix must not kick out. He requires a polyvinyl acetate that doesn't stick to and build up on surfaces of hot processing equipment. In addition to these, there are compatibility considerations that are necessarily made in some processes.

Polyvinyl acetate has wonderful adhesive properties and produces very stiff finishes. Some goods are treated with enough softener present in the polyvinyl acetate bath to allow considerable pick-up with most of the handle gain resulting in body rather than firmness. Cross-linking agents can be added to the bath to provide more resistance to water. It has been recently found that the stiffening efficiency of polyvinyl acetate can be increased to such a point that processing savings are obtained.

Our company produces several modifications of the straight type polyvinyl acetate emulsions as well as a series of copolymers with ethyl acrylate and other internal plasticizers. It was necessary to develop these specialty emulsions with such processing economy as to allow ourselves a very competitive place, even against the single purpose "paint grade" emulsions.

I have discussed a few of the most generally accepted organic finishing agents. There are literally hundreds of other materials and considerations that would fall in this category. Textile wet processors, many times, move with incredible speed when developments in the retail field indicate the necessity. Their quick response to the frantic demands for coonskin imitations, during the "Davy Crockett craze," has credited them with saving the American pussy cat from extinction.

A.I.E.E. Textile Subcommittee Lists Program For Annual Conference

THE textile industry subcommittee of the American Institute of Electrical Engineers will hold its annual conference on electrical application in the textile industry April 2-3 at the Heart of Atlanta Motel in Atlanta, Ga.

The conference will open at 10 a.m. on Thursday, April 2, and will adjourn at noon on Friday, April 3. Papers to be presented at the opening session include: (1) "Inspection Lighting for Textile Manufacturing," by Willard Allphin, Sylvania Lighting Products, Salem, Mass.; (2) a prepared discussion led by J. J. Burns, General Electric Co., Atlanta; (3) an open discussion; (4) "The Disease Called Power Factor and How Capacitors Can Profitably Cure This Disease," by H. J. Forbes Sr., Celanese Corp., Rome, Ga.; (5) a prepared discussion by R. W. Wages, Georgia Power Co., Atlanta; and (6) a concluding open discussion.

An afternoon session on April 2 will get under way at 2:30 p.m. and will feature: (1) "A Practical Understanding of Semi-Conductors," by Dr. Gene Strull, Westinghouse Electric Corp., Baltimore, Md.; (2) an open discussion; (3) "Application of Semi-Conductor Drives in the Textile Industry," by C. D. Beck, General Electric Co., Schenectady, N. Y.; and (4) a concluding open discussion.

The closing session of the conference will begin at 9 a.m. on Friday morning, April 3, and will feature: (1) "Is Your Electrical System Safe?" by Guy Booker, The Chemstrand Corp., Pensacola, Fla.; (2) a prepared discussion led by Swaffield Cowan, Factory Insurance Association, Charlotte, N. C.; (3) an open discussion; (4) "How To Secure Optimum Performance From Commutators and Brushes," by D. R. Dobson, Stackpole Carbon Co., Pittsburgh, Pa.; (5) a prepared discussion led by a representative of the National Carbon Co., Atlanta; (6) an open discussion; (7) "How To Increase Down-Time on D. C. Adjustable Speed Drives by Systematic Trouble-Shooting," by C. D. Wright, Reliance Electric Co., Greenville, S. C.; (8) a prepared discussion led by M. E. Stout, The Du Pont Co., Chattanooga, Tenn.; and (9) a concluding open discussion.

The conference is designed to bring before managers, engineers, technicians and master mechanics information concerning application of new equipment and discussion of operational problems of existing equipment. Registration for the conference begins at 9 a.m., April 2.

The Choice And Use Of Electrical Test Instruments In The Textile Plant

By J. M. FJELD and DAN McCONNELL*

THE most basic electrical test instrument is one to indicate voltage, and since most textile plants operate with power voltages above 400 volts, it is difficult to use a common light bulb in a pigtail socket for all of the testing required. To fill this basic requirement, the test instrument should be able to handle voltages up to 750 volts, be pocket-portable, and preferably indicate the approximate voltage level being dealt with, and whether a.c. or d.c.

The Wigginton tester meets these requirements. The instrument is tough enough to be carried with the usual pocket tools and will meet the previously given requirements for voltage range and indication of a.c. or d.c. It is a widely used device and it is quite common practice to require that this piece of test equipment be carried by the electrician on "first call." Immediately upon opening a switchbox or other piece of electrical equipment that is in trouble the electrician should use the instrument on all exposed contact areas or wiring to make sure that all equipment is de-energized before any parts of the equipment are touched by the hands.

In other words, when a switchbox is opened, the man hits all the wiring in the box with the tester prongs to make sure the equipment is dead. The instrument buzzes when it is fed a.c., and it does not buzz when it is fed d.c. Usually, the instrument does not indicate the polarity of the d.c. The voltage indication is quite rough and it is not a reliable device to indicate levels of voltage.

The next step up in instrumentation is a small, portable a.c.-d.c. voltmeter with an ohm meter circuit built in. This instrument is not as portable as a Wigginton tester but it indicates voltage level more accurately and the d.c. scales will indicate polarity. The ohm meter is very useful in checking circuit continuity. This ohm meter check, incidentally, is made at a very low voltage that is given by a couple of small flashlight dry cells and the results cannot be considered as too accurate a test of insulation levels. However, the ohm meter readings will be found very useful when checking the resistance settings of various control and balancing resistors as found in d.c. slasher drives.

What electrical testing instruments are necessary for ordinary mill maintenance work? How are these instruments properly used and what is their function? This article, delivered at the American Institute of Electrical Engineering's conference on electrical equipment for the textile industry, October 30-31, 1958, at North Carolina State College, gives these and other answers as well as pointing out some of the hazards of electrical trouble-shooting.

Clip-On Ammeters

The next basic quantity with which we are concerned is current, and this need is met by a rather wide variety of clip-on ammeters. These range from pocket-portable equipment to larger devices that are hand-portable. These instruments are normally built with a rather wide adjustment of current ranges available by various settings of hand selector switches built on the equipment. Some of them also incorporate a voltmeter circuit that is made available by plugging in test leads.

It should be remembered that all forms of these devices are essentially a split-core current transformer feeding a dry disc rectifier and then feeding the rectified a.c. input to the indicating meter. This rectification allows the meter to be built with an evenly space indicating scale. Accidental use of one of these meters to check the current in a d.c. circuit will always blow it up. It should be remembered that these meters are for a.c. use only. There is one test that is rather commonly made on which this is particularly important.

The need occasionally arises to check the starting torque on a machine driven by a slip-ring induction motor. These motors normally show the rated rotor current on their nameplates. A very useful way of determining the starting torque of the machine is to measure the current in the rotor secondary circuit just at the instant the machine starts rolling. Compare this current with the full load rated current shown on the nameplate. The torque demand of the machine is then the same percentage of the full load rated torque of the motor as the measured rotor current is of the rated rotor current.

Before the motor starts rotating, the frequency in the secondary circuit is the same as that in the stator—60 cycles. As the rotor starts to turn, the frequency begins to

*This paper, presented last Fall before the Textile Conference of the American Institute of Electrical Engineers at North Carolina State College, was co-authored by J. M. Fjeld, electrical engineer, Burlington Industries, Greensboro, N. C., and Dan McConnell of Southern Electrical Equipment Co., Charlotte, N. C.

drop, and at full speed would be only a few cycles per second. It is, therefore, necessary to take the meter off the secondary leads by the time the motor gets up to one-quarter speed because not only is the reading useless for purposes of computation but also the meter stands a good chance of being damaged.

Power factor is another quantity that must very often be checked on plant circuits and this can be done with a clip-on ammeter. With the ammeter, it is necessary to have only enough room to drop the hook of the current transformer around the feeder cable. With the power factor meter, however, it is necessary to have a potential connection as well. This is usually gotten by means of two needle-pointed probes that can be pushed through the insulation on the feeder cables without leaving a hole that would cause trouble.

Instruments have been covered that will allow us to measure voltage, current and power factor without disconnecting any wires to put any test equipment in the circuit. Before the advent of the clip-on meters, some 20 years ago, it was necessary to disconnect apparatus and put ammeters or current transformers into the circuit, often a quite awkward job. On certain types of test work it is still necessary to disconnect apparatus so indicating meters can be put into circuit. For this type of work there are several assembled kits of meters in convenient carrying cases that might be found useful. Some people make very good use of this type of test equipment by arranging to cut into the apparatus circuit by making various connecting devices. The most common one is to take a pair of renewable fuses and bring leads from each end of the fuse that will reach the test instrument case. Where motors are protected by fuses, connecting this type of equipment merely means that you pull out the working fuses and put in their place the fuses that bring leads to the instrument box.

Recording Instrument

So far, we have talked entirely of indicating instruments, that is, equipment that shows by the position of a needle what is going on in the circuit at that particular instant. This is quite often not the entire story as we may want to watch voltage or current over a period of time. It is inconvenient to have a man standing on top of the instruments and recording everything they show for several hours. The curve-drawing or recording instrument is the answer to this question.

Any test requiring use of a curve-drawing instrument is not a quick thing, so all these instruments are what might be called two-hand portable. In other words, a pretty fair load to cart around. There are two general forms of these instruments—one using a disc chart and the other using a strip chart. The charts are moved in step with time by either a spring-driven clock or an electric motor clock. The disc-chart instrument has been less popular in recent years for portable service and the field is now practically dominated by the strip-chart instrument.

Recording volmeters are very commonly used, especially in weaving plants and areas using electronic devices. The method of connecting these instruments, with any associated potential transformers that might be needed, is obvious. For 600 volts and lower the self-contained type is preferred.

One of the main things that concerns any electrical system is the amount of current being carried in a given feeder and its variations throughout a day's run. The importance of the current, compared to some of the other factors, is that it is the amperes being carried that determines the amount of heat made in a feeder system. Since most troubles come from heating of cables and apparatus, a picture of the amperes flowing in any given part of the circuit gives a very good idea of what is going on.

Rather recently available is a recording ammeter that takes its feed from a clip-on current transformer that enables the meter to be put in the circuit without breaking any connections. The design of this meter is such that it requires 110-volt power to operate the chart-driven motor where electric drive is used. This is commonly available in the plant from a nearby receptacle or the plant lighting system. If you are trying to run down a heating problem, a record of the amps flowing throughout a day's run, with power factor and voltmeter readings made with indicating instruments and noted on the recording ammeter chart at appropriate times, will enable you to get a rather complete picture of the power flow with a few computations.

Split-Core Transformers

It is true that our feeder sizing and apparatus sizing is determined by the number of amperes that must be handled, but power is paid for in terms of kilowatts. This leads to the recording wattmeter, usually a strip-chart instrument. So far this equipment has not been developed with easily available split-core current transformers that can be inserted in the circuit without doing some disconnecting. The wattmeter can be used to indicate power factor in any circuit by disconnecting the potential leads of first one phase and then the other. When a survey is being made to determine the power usage in any department, less computation is required if the test is made with a recording wattmeter.

Since motors on a varying load change power factor with the change of load, it is often better to make tests such as those for the comparative power demands through a doffing cycle of spinning frames with the recording wattmeter rather than the recording ammeter. The wattmeter also watches all three phases rather than only one. One of the main poblems with the recording wattmeter is that appropriate potential and current transformers must be available to put this equipment into the usual motor circuits. The potential circuits will take 600 volts, having an internally wired potential transformer. The current element of the meter is limited to a maximum of 5 amperes. The need for special transformers can be taken care of in switchboard applications by arranging the transformers to come out to test connections. Making this provision in a switchboard will allow the installation of a recording wattmeter on various feeders with a minimum of trouble.

Megger

We have now covered both the indicating and recording measurement of almost all quantities with which we have to deal except that of insulation resistance. For this factor, the megger is virtually standard. This is a portable device incorporating a hand-cranked generator that puts out 500 volts d.c. and gives a needle indication showing the relative

level of insulation resistance in megohms. This equipment is used on motors, transformers, cables, and in virtually any part of the electrical system where there must be a fairly high level of insulation to ground or another phase. The generator has a governor on it so that no matter how hard it is cranked it will not generate over 500 volts. There are few cautions in its use except where it is connected to a cable system which has considerable capacitance. On this test you have to watch out for the fact that you charge up the cable capacitance to a pretty good level and can get a kick from it.

The same inductive kick idea, incidentally, also applies in taking voltmeter readings across field coils of direct motors and generators. On this test, always disconnect the voltmeter before disconnecting the d.c. feed to the coil, as the inductive kick from the magnetic field collapsing through the field coil can quite easily, on large motors, burn up the voltmeter.

We have now shown and outlined the use of a complete battery of test equipment, but all of it is not needed in the usual mill. The minimum available should be Wigginton testers for each electrician, and a volt-ohm meter and clip-on ammeter for the plant. The next piece of apparatus should be a megger. This covers all of the indicating type tests that are usually needed.

In the larger mill groups where there is virtually continuous testing, a full battery of recording instruments is justified. Smaller plant units can probably get what they need by borrowing or renting the recording instrumentation required for a certain test. These instruments are quite generally available from the major electric service shops serving the textile areas.

In transporting and using instruments remember that although they are very rugged their moving parts must be light and therefore somewhat delicate. This particularly applies to the bearings.

In hauling instruments in an automobile, it is best to let them ride on the back seat or on a strip of foam rubber on the floor of the car to keep road shock out of the bearings. An instrument brought from the trunk of a cold automobile into a weave room on a Winter day is going to sweat both externally and internally. It is best to let the instruments sit in a dry office and warm up to room temperature before taking them into humidified areas.

The same comments about vibration in automobiles apply to instuments hauled around the plant on hand trucks. If you do not believe there is considerable vibration to a push truck, sit down in it, take a ride and see for yourself. Then figure do you want to add some padding or let the instrument bearings take the same pounding you took.

In working with instruments, it is well to remember that the instrument merely tells what it sees in a small part of the power system. The ability to put the bits of information given by the instruments into their proper place in the whole system depends strictly on the amount of thinking done by the man who is reading the results of the metered test. When setting up a testing procedure, think out first what you want to find out, then consider the measuring equipment available to you and what it will tell you. Make the tests and record the data with care. Analyze the information given by your meters with due consideration for the accuracy of their observation and the relation of the recorded factors one with another.

A. S. M. E. Textile Engineering Conference Scheduled For Clemson, March 12-13

THE American Society of Mechanical Engineers will hold its 1959 Textile Engineering Conference Thursday and Friday, March 12-13, on the campus of Clemson College, Clemson, S. C. Sponsored by the A.S.M.E.'s textile division, this year's conference will have as its theme, "Trends in Textile Engineering."

The first general session will convene at 9:30 a.m. Thursday, March 12 at the Clemson House. Two prepared papers will be presented at this session—"Modern Finishing Plant Design," by H. Morgan Rogers, Lockwood-Greene Engineers, Spartanburg, S. C.; and "Trends in Finishing Plant Ventilation," by Holmes W. Frederick, J. E. Sirrine Co., Greenville, S. C. A second portion of the first general session will be devoted to an open discussion led by J. C. Whitehurst, James Hunter Inc., Greenville.

General Session II

Following an informal luncheon at the Clemson House, the conference will resume at 2 p.m. in a second general session which will feature two prepared papers and an open discussion. Papers scheduled include "Radiant Heat Drying," by R. B. Chipman, General Electric Co., Charlotte; and "Air Dryers and Curing Ovens," by B. R. Andrews Jr., J. O. Ross Engineering Corp., New York City. Acting as moderator for the open discussion will be A. D. Asbury, vice-president of the J. E. Sirrine Co., Greenville.

General Session III

The conference will be concluded on Friday morning, March 13, with a third session beginning at 9 a.m. Four prepared papers are scheduled for presentation—"Magnetic Drafting System," by R. M. Jones, Saco-Lowell Shops, Biddeford, Me.; "Modern Spinning—The Piedmont Frame," by Carl Brandt, Whitin Machine Works, Whitinsville, Mass.; "The Unifil Loom Winder," by Charles Land, Woodside Mills, Greenville, S. C.; and "The Shuttleless Loom," by F. M. FitzGerald, Draper Corp., Hopedale, Mass. The third session open discussion will be moderated by J. L. Chapman of the Ralph E. Loper Co., Greenville.

The conference proper will adjourn at noon, followed by 2 p.m. tours of the laboratories and facilities of Clemson College's School of Textiles and School of Engineering.

Registration for the conference will begin in the lobby of the Clemson House at 8 a.m. on Thursday, March 12. A registration fee of $10 per delegate includes tickets to the informal luncheon on Thursday and a 7 p.m. banquet on Thursday night. Advance registration can be made through Prof. S. M. Watson Jr., P. O. Box 1344, Clemson, S. C.

U.S.D.A. Spinning Lab Starting Up In March

The U. S. Department of Agriculture's new 1,000-spindle pilot spinning laboratory will begin production in mid-March, according to Henry Shanklin, field station leader for the Marketing Research Division of the Agricultural Marketing Service. First personnel reported January 15 for training in facilities of the Clemson College School of Textiles. Machinery, equipment and supplies are being installed, with 96% of the machinery completed. This includes four card frames, four spinning frames, totaling 1,000 spindles; one drawing frame and one roving frame.

The lab will use the college's opening and picking equipment, already available to research in the modern textile school plant. Installation will be followed, Shanklin reported, by a "breaking in" process. The present organizational period will be replaced by production in March with completion of preparations for a processing unit. This process will carry cotton from the opening room, through the spinning and winding rooms to a testing laboratory.

The testing laboratory, which will test all phases of fiber, is also scheduled for completion as the "second step" in mid-March. The "first step," production, processes raw cotton into yarn. Eventually, the pilot laboratory, in full operation, will treat cotton from the raw state to the finished product. Shanklin, a native of Clemson on a special assignment he hopes may become permanent, said the complete cycle of cotton—field to fashions—can actually be achieved at Clemson, at present, through co-operation of the School of Textiles, which has weaving and finishing facilities.

Textile Fiber Products Labeling Rules Issued

A public hearing to consider proposed rules and regulations under the recently enacted Textile Fiber Products Identification Act will be conducted by the Federal Trade Commission at its offices in Washington at 10 a. m. March 10. Forty-five tentative rules have been prepared by the commission's staff and released for consideration by interested parties at the hearing. Harvey H. Hannah, chief of F.T.C.'s Division of Textiles and Fur Identification, said the hearing will continue until all who request to present their views can be heard. Meanwhile, he said, written comment on the proposed rules will be accepted by the F.T.C. in advance of March 10.

The commission will consider the entire record and will issue final rules prior to June 3. The Act, which was enacted last September 2, together with these rules and regulations issued under it, becomes effective on March 3, 1960.

In general, the new Textile Act takes up where the Wool Products Labeling Act of 1939 and the Fur Products Labeling Act of 1951 leave off. It is designed to cover the field of textile fiber content labeling and advertising, ex-

cept as already covered by the Wool Products Labeling Act.

According to Hannah, the new Textile Act is primarily designed to benefit the consumer in providing for truthful disclosure of fiber content. Its other objectives are to provide protection to textile producers, manufacturers and distributors from the unrevealed presence of substitutes and mixtures in so-called textile fiber products.

The rules to be considered at the hearing cover all major textile fiber products but not the several hundred small items in which there is not believed to be sufficient public interest in their labeling. The rules exclude all products except these major textile fiber products: articles of wearing apparel, handkerchiefs, scarfs, bedding, curtains and casements, draperies, tablecloths, napkins, doilies, floor coverings, towels, wash cloths and dish cloths, ironing board covers and pads, umbrellas, batts, flags, cushions, furniture slip covers and other covers for furniture, afghans, sleeping bags, antimacassars and tidies, hammocks, and products subject to Sec. 4(h) of the Act.

Specifically excluded are: second-hand household textiles, coated fabrics, textile fiber products made by company store operators and sold exclusively to their own employees and a list of sundries such as belts, suspenders, tapestry cloth and shoe laces.

Concerning the labeling of imported textile products, the proposed rules include a requirement that where the form of such a product is not basically changed, the country where the product was made or processed must be disclosed. However, if the textile fiber product is made in the U. S. from imported textile fiber products, the country where the imported materials were made or processed need not be disclosed. For example, the labeling of a shirt made in the U. S. out of an imported fabric need not disclose where the fabric was made or processed.

S.T.A. Announces Spring Meeting Schedule

Spring divisional meetings of the Southern Textile Association will get under way on Saturday morning, March 14, with a meeting of the Piedmont Division at the Johnston Memorial Y.M.C.A., 3025 North Caldwell Street, Charlotte. The meeting will begin at 10 a. m., with Highland Park Mfg. Co. acting as host.

W. D. Vincent

M. L. Brackett

The association's South Carolina Division will meet on Friday evening, April 3, in Spartanburg at the Fairforest High School, with Reeves Bros. Inc. acting as host. A light supper will be served beginning at 6 p. m., with the technical session scheduled to begin at 7:30 p. m. The Northern North Carolina-Virginia Division will hold its Spring meeting on Saturday morning, April 11, at Lexington Senior High School in Lexington, N. C. The meeting will begin at 10 a. m. The final Spring meeting will be that of the Eastern Carolina Division on Saturday morning, April

W. B. Etters

Marion Allison

H. W. Buchanan

25, at the School of Textiles, North Carolina State College, Raleigh.

Following the divisional meetings, the association will hold its 51st annual meeting June 18-20 at the Ocean Forest Hotel, Myrtle Beach, S. C. Walter D. Vincent of Dan River Mills, Danville, Va., is president of the association. Divisional chairmen include M. L. Brackett, Highland Park Mfg. Co., Charlotte, Piedmont Division; W. B. Etters, Reeves Bros. Inc., Spartanburg, South Carolina Division; Marion E. Allison, Cone Mills Corp., Hillsboro, N. C., Eastern Carolina Division; and H. W. Buchanan, Erlanger Mills, Lexington, Northern North Carolina-Virginia Division.

Wash-And-Wear Odors Said Eliminated

A new chemical process that is said to eliminate odors from resin-treated cottons and synthetics, which are the basis of most present wash-and-wear fabrics, has been announced by West Point Mfg. Co. It reports that the process has been successfully tested on more than 50,000 yards of fabrics in actual plant runs in several leading finishing plants.

In every case it "completely and permanently" rid the fabrics of all formaldehyde and amine odors, according to Dr. M. Earl Heard, vice-president in charge of research. The process, called X-O, can be applied to all types of resins presently used in wash-and-wear finishing, including ureas, ethylene ureas, triazones, triazines, acetals and their mixtures. The odor-formation problem affects, to varying degrees, finishes, cutters, retailers and consumers, but it is most noticeable after storage of goods either at the finishing plant, cutting plant or the retail store, according to Dr. Heard.

Finishers Hold Annual Meeting

The National Association of Finishers of Textile Fabrics re-elected Lawrence Marx Jr. as president at its annual meeting held last month at the Waldorf-Astoria in New York City. Marx is vice-president of the Clearwater (S. C.) Finishing Co. and is a director and vice-president of United Merchants & Manufacturers Inc., the parent organization. Re-elected as vice-presidents were Godfrey S. Rockefeller, Cranston (R. I.) Print Works, and Richard D. Wood Jr., Millville (N. J.) Mfg. Co. Joseph E. Hoesl, formerly secretary of the organization, was elected treasurer. J. Marshall Cole, Cold Spring Bleachery, Yardley, Pa., was re-elected chairman of the executive committee.

In a report to the members, Joseph Hoesl, secretary of the organization, said that total yardage of cotton textiles finished in 1958 dropped 200 million finished yards from the 1957 total of 7.5 billion yards, a drop of 2.6%. Hoesl estimated that plain dyed and finished goods showed the most severe decline—down more than 8%. Bleached goods amounted to almost 3.4 billion of yards or about a 1% decline from

the 1957 total. The total of plain dyed and finished goods processed in 1958 equalled 2.3 billion yards, it was reported.

The following members were elected to one-year terms expiring in January 1960: Robert Bendheim, Rock Hill (S. C.) Finishing Co.; Elliot Broadbent, Sayles Finishing Plants Inc., Saylesville, R. I.; Homer Carter, Pepperell (Ala.) Mfg. Co.; Ernest J. Chornyei, Bradford Dyeing Association (U.S.A.), Westerly, R. I.; Gordon Coles, Fairforest Finishing Division, Reeves Bros., Spartanburg, S. C.; A. E. Gutman, Harodite Finishing Co., North Dighton, Mass.; R. H. Jewell, Crystal Springs Bleachery, Chickamauga, Ga.; Royce Pharr, USF-Aspinook Finishing Division of the Gera Corp., Norwich, Conn.; W. R. Robertson, Riegel Textile Corp., Ware Shoals, S. C.; and Robert D. Sellers, Southern Bleachery & Print Works, Taylors, S. C.

Elected to three-year terms were Arthur G. Poor, Standard Bleachery & Printing Co., Carlton Hill, N. J.; Julian Robertson, North Carolina Finishing Co., Salisbury, N. C.; and James Harrell, Delta Finishing Division of J. P. Stevens & Co., Clemson, S. C.

Commerce Department Studies Industry Cycles

The well-recognized peaks and valleys which characterize the textile industry run in cycles of about two years' duration, and where clothing and household products are concerned, seemingly are actuated primarily by sentiment at the retail sales level. The sales of industrial textiles apparently are geared more to over-all changes in industrial activity. General business conditions have a more pronounced effect on the levels of fiber consumption than do cyclical changes in the textile industry.

These conclusions are reached in a comprehensive study of the textile industry just concluded by the Textiles & Clothing Division, Business and Defense Services Administration, U. S. Department of Commerce, and incorporated in a publication, "Cycles and Trends in Textiles." Illustrating the regular recurrence of these peaks and valleys since 1920, the study concedes that the precise reason for the cycle is uncertain, but concludes that it seemingly "is caused by alternating waves of optimism and pessimism as the yearly buying seasons succeed each other." Copies of the study are available at 40 cents each from the Superintendent of Documents, Washington 25, D. C.

Nuclear Energy Effect On Fibers Studied

Four major textile firms have agreed to support, along with the Atomic Energy Commission, a $275,000 basic research project to be conducted over a three-year period at the new radiological laboratory of the School of Textiles Research Center at North Carolina State College, according to William A. Newell, director. The mills which will supply 20% of the funds required are Burlington Industries, Cone Mills Corp., J. P. Stevens & Co. and Reeves Brothers Inc. The remaining 80% of the money will be provided by the A.E.C. The proposed research program will explore the effects of nuclear energy on fibers, fabrics and textile processes. Work has already begun.

The radiological laboratory at the college's textile research center was completed last Fall at a cost of $96,000. At that time it received a cobalt-60 source to be used in research in an effort to find industrial uses for nuclear radiation. The study will cover four areas of potential

applications. They are modification of fiber properties by irradiation; modification of fiber and fabric properties by finishes applied by using nuclear radiation; use of beta gauges for measurement and control of textile processes; and use of activation-analysis techniques for research.

Resin Finishing Slated For T.Q.C.A. Talks

Quality requirements of cotton grey goods destined for resin finishing will be reported at the Spring meeting of the Textile Quality Control Association to be held March 26-27 at North Carolina State College. The fabric requirements will be discussed by Sydney M. Cone Jr. of Cone Mills Corp. Mr. Cone will approach this problem from the finisher's point of view and explain the need for these quality specifications. The meeting will also contain, among others, a paper on humidification in quality control and a timely discussion of cotton blending with relation to machinery, methods and personnel.

Cotton Spindles Decrease, Consumption Up

While there was an over-all decrease in the number of active spindles in the last six months of 1958 as compared with 1957, there was an over-all increase in the amount of cotton consumed in the U. S. because of increased spindle activity. At the end of December 1958, the number of active spindles was down to 19,276,000 from the total of 19,727,000 at the end of December 1957, while cotton consumption was up to 4,131,786 running bales from the consumption of 3,953,986 bales in the comparable six-month period in 1957.

In December cotton consumption totalled 727,410 running bales as compared with the 672,838 bales consumed in November and 569,873 bales consumed in December 1957. Man-made fiber staple consumption in December also showed an increase. Some 47,581,000 pounds of man-made fiber staple was consumed last December, a sizeable increase over the November consumption of 40,955,000 pounds and the December 1957 consumption of 30,410,000 pounds.

At the end of December the number of active cotton system spindles had decreased to 19,276 thousand from the December 1957 total of 19,727 thousand but the number of spindle hours for the month totalled 10,427 million against 7,960 million spindle hours recorded for the previous December.

Cotton Consumption In The U. S.

	1958	1957
July	613,511	639,776
August	638,767	613,511
September	647,894	659,262
October	833,366	819,965
November	672,838	651,599
December	727,410	569,873

Number Of Active Cotton Spindles In The U. S.

	1958	1957
July	19,230,000	19,760,000
August	19,268,000	19,744,000
September	19,251,000	19,773,000
October	19,279,000	19,793,000
November	19,269,000	19,767,000
December	19,276,000	19,727,000

Promotions, Resignations, Honors, Transfers, Appointments, Elections, Civic and Associational Activities

PERSONAL NEWS

W. H. Wallace Jr.

William H. (Bill) Wallace Jr. has joined the staff of the Louis P. Batson Co., Greenville, S. C. Wallace is well known to the textile industry, having been associated with Alice Mfg. Co., Easley, S. C. and with W. N. Cruikshank Cotton Co. While with Alice Mfg. Co., Wallace was in the cotton department and the quality control departments. His territory will consist of a portion of the mills within the radius of 150 miles from Greenville. The Batson Co. manufactures and distributes specialty items for the textile industry.

W. A. Edwards Jr. has been named superintendent of the Bevelle Plant of Avondale Mills at Alexander City, Ala. Edwards formerly occupied a similar position with the Catherine Plant in Sylacauga. He is a graduate of Auburn with a degree in textile engineering.

Russell Gill has resigned as president of Southern Sizing Co., East Point, Ga. His future plans were not made known. Gill has been active in the American Association of Textile Chemists & Colorists. He served as chairman of the Southeastern Section in 1948-49 and was a national counselor in 1950-51.

C. K. Torrence has been named president of Superior Yarn Mills, Mt. Holly, N. C. He succeeds Grady Rankin, who is retiring. Torrence has been with Superior for the past 19 years. The company is a wholly-owned subsidiary of Duke Power Co.

Thomas Jerald Willis has been appointed assistant division superintendent of Dan River Mills' No. 1 Division in Danville, Va. Willis has had many years experience in the textile industry, having been associated with Greenwood (S. C.) Mills in a variety of capacities from 1935 until 1958. Most recently, he has been self-employed as a textile consultant.

Norman A. Jerome has been named superintendent of the Pawtucket, R. I., plant of the National Ring Traveler Co. In the years preceding his present appointment, Jerome was production manager for Victor Ring Traveler Co. in Providence, R. I.

Arthur Howard, for many years a key member of the Victor Traveler Co., has been transferred from Providence, R. I., to Greenville, S. C. Howard's new title is Victor sales co-ordinator. He joined Victor in 1952 working directly under the president. When Victor then became a part of the Saco-Lowell Shops, Howard retained responsibility for a vital portion of the Victor operation.

E. W. Jones

Three new positions have been created in the industrial division of the Armstrong Cork Co. to add emphasis and strength to the company's drive for sales expansion in existing product lines and rapid development of new products. The new positions are field sales manager, general manager of market development and manager of new product development. These organization changes should enable the division to accelerate its growth pattern to take advantage

C. B. Grove

Gordon K. Billipp

of an expected improvement in business during the next several years. The position of field sales manager has been filled by E. W. Jones, formerly manager of the product planning department. C. B. Grove, manager of gasket and packaging sales, has been named general manager of market development. Gordon K. Billipp, assistant manager of the Cleveland, Ohio, district office, has been named manager of new product development which combines the product planning department with market research.

William H. Kieffer and Dr. Charles J. Weidmann have been elected vice-presidents of the Ciba Co., New York City. Kieffer, who will retain his position as general sales manager of the dyes division, came to Ciba in New York in 1950, after having been associated with Ciba Co. Ltd. in Montreal for a number of years. Kieffer also worked for the American Cyanamid Co. prior to joining Ciba. Dr. Charles J. Weidmann was appointed technical director of Ciba in 1953, a position which he will continue to maintain. He was previously associated with Ciba Co. Ltd. in Montreal and other Ciba companies abroad.

John E. Bassill

John E. Bassill has resigned as president American Enka Corp., effective April 22. The company announced that his successor will be elected at that time when other organizational changes will be made. Bassill has been president of American Enka since 1950. He has been prominent in the rayon industry for many years, having previously headed the Tubize Corp., the North American Rayon Corp. and American Bemberg Corp. He took a leading part in the formation of Tyrex Inc., the industry organization which certifies and promotes the new Tyrex viscose tire yarn.

W. C. Filz has been named manager of the Hartsville, S. C., plant of USF-Aspinook Finishing Division of the Gera Corp. Filz is a vice-president and former resident manager of the firm's Norwich, Conn., plant. He succeeds George W. Little, who died in December. . . . Ray R. Walker, formerly plant superintendent, has been appointed assistant resident manager.

Harry B. Kilgore, office manager of the Woodruff, S. C., plant of Abney Mills, retired last month after 32 years at the mill. During his career with the Woodruff plant, Kilgore held the positions of secretary and manager. Prior to 1947, the plant was part of the Brandon Corp.

Paul C. Beatty, resident manager of the Halifax (Va.) Mills plant of Burlington Industries, has resigned to become associated with the Record-Advertiser Inc., a South Boston newspaper publishing firm. Beatty, who purchased an interest in the firm, was named vice-president.

James Bennett has retired after serving 45 years with American Viscose Corp. He had held the post of engineering consultant to the Front Royal, Va., rayon plant manager, A. G. McVay, since May 1956. Bennett joined American Viscose as a spinner at the Marcus Hook, Pa., plant and held successive positions as a clerk in the spinning department and foreman of the reeling department. During his career with the

corporation, he took active part in supervising the building and equipping of a number of American Viscose plants.

Hugh K. Smith

Hugh K. Smith, former representative of the Terrell Machine Co. and Watson & Desmond, and Ben H. Crawford and Joseph L. Teat, owners and operators of Southeastern Engineering Co., who formed a sales organization two years ago, are now representatives in Georgia and Alabama for Stedco-Southern Inc., Steel Heddle Mfg. Co. subsidiary which manufactures all types of automatic loom filling bobbins.

Robert L. Allen has been named director of public relations of The Kendall Co., Boston, Mass. Allen will be responsible for the development and direction of Kendall's over-all public relations program as well as its co-ordination within Kendall's four divisions.

Ernest W. Schaw and Fitz L. Sargeant of Reynolds Metals Co., Richmond, Va., general managers of the Southeastern and South Central sales regions respectively, have been elected vice-presidents of Reynolds Aluminum Sales Co. Schaw makes his headquarters in Camden, N. J. Sargeant has his headquarters in St. Louis, Mo.

George O. Linberg

George O. Linberg has been named executive vice-president of Melrose (Mass.) Chemical Co. The corporation, which was established in 1913, is a producer of specialized products for the textile industry. Linberg will devote much of his time to the application of the unique line of permanent finishes developed by the company. A veteran in the field of dyeing and finishing of textiles and paper, Linberg was until very recently, vice-president and regional sales manager of Synthron Inc. He is a past president of the A.A.T.C.C.

Jerome Wilson has been named technical superintendent of the Excelsior Finishing Plant, Pendleton, S. C. Wilson replaces Coy J. Gray, who has joined McCormick Mill. . . . Fred H. Duncan has been named overseer of dyeing replacing Wilson. . . . Donald H. Logue, formerly in the supervisory training program, will succeed Duncan.

Dr. Herbert F. Schiefer has been appointed chief of the Textiles Section of the National Bureau of Standards, succeeding William D. Appel, who retired January 31 after 30 years service as chief of the section. Dr. Schiefer is noted for his pioneering research in the measurement of physical properties of textile fibers, yarns and fabrics. He has designed and developed instruments for evaluating the characteristics of various textiles, and a number of these instruments are widely used by the textile industry today. He received the Meritorious Service Award of the U. S. Department of Commerce in 1949, and the Exceptional Service Award in 1956. In 1950 Dr. Schiefer was the first recipient of the Harold DeWitt Smith Memorial Award of the American Society for Testing Materials for "noteworthy contributions to the fundamental knowledge of textile fibers and fabric structure." He has authored over 35 research papers on the properties of textiles.

George Asnip Jr. has been appointed plant manager of the Celanese Corp. of America's spun yarn plant at Burlington, N. C. He succeeds Thomas S. Waller who has been assigned to the marketing department in Charlotte. Asnip came to Celanese from Wellman Co. where he had served as production superintendent and assistant to the vice-president. He previously served as supervisor of industrial engineering at J. P. Stevens Co. Asnip received his B. S. degree in textile engineering from Clemson College in 1950.

Richard A. Snipes

Richard A. Snipes has joined New York & New Jersey Lubricant Co., New York City, manufacturer of Non-Fluid Oil, as sales representative in the South Carolina territory. Snipes worked for five years with Belton Mills where he acquired familiarity with the maintenance problems of textile machinery.

Walter S. Montgomery Jr. has been appointed vice-president in charge of Spartan Mills Inc., New York City. He is the son of the company's president and treasurer. He joined the firm in 1955. For some time he worked in the various mills of the Spartan group in Spartanburg.

William D. Appel

William D. Appel, chief of the textiles section and assistant to the chief of the organic and fibrous materials division of the National Bureau of Standards, retired on January 31. He has been with the bureau since 1922, and has been section chief since 1929. Appel is well known for his research on the properties and performance of dyes and dyed materials; the physical, chemical and biological properties of textile fibers; and on textile test methods. Prior to joining the bureau, he had been a research chemist in private industry. Following his retirement, part of Appel's time will be spent editing the annual technical manual of the American Association of Textile Chemists & Colorists.

Frederick T. Lense has been named to the research and development staff of Texize Chemicals Inc., Greenville, S. C. Formerly connected with the Southern Research Institute at Birmingham, Ala., Lense directed research projects for many firms in the area of textile products. Prior to joining Southern Research, he was connected with Monsanto Chemicals and Calloway Mills.

Jesse A. McCall

Jesse A. McCall has joined the Atlanta sales office of the Whitin Machine Works. McCall replaces W. G. Stainton who recently resigned. A graduate of N. C. State, McCall was employed by Harden Mfg. Co. in Gastonia, N. C., later becoming superintendent. Since 1950 he has been in sales engineering work in the Georgia-Alabama territory with both Pneumafil Corp. and Diehl Mfg. Co.

J. Miller Byne III has been assigned to the Southern sales territory for Becco Chemical Division, Food Machinery & Chemical Corp., Buffalo, N. Y. Byne will operate out of the Charlotte office, covering North and South Carolina.

Frank Blue, formerly plant manager of the Pacific Mills plant at Hot Springs, N. C., has been named manager of the Valley Falls Division of Sidney Blumenthal & Co., yarn spinning mill, succeeding Ernest Chew. Pacific and Blumenthal are member companies of Burlington Industries. Blue was with Raeford (N. C.) Mills prior to joining Pacific.

Seth Hall

Seth Hall has joined the Interstate Textile Equipment Co. of Charlotte as a sales engineer. Hall was previously associated with Parks & Woolson Co. of Lowell, Mass., and served the Southeastern territory for them. Prior to that, he was with Merrimac Mfg. Co., Lowell, Mass. He will specialize primarily in the dyeing and finishing department of Interstate.

Michael D. Croce, formerly napping overseer for Esmond (R. I.) Mills and Beacon Mfg. Co., Swannanoa, N. C., is now with Ashworth Bros. Inc. in a sales and service capacity. At present Croce is working out of the Charlotte office. He will regularly contact mills having napping equipment.

Thomas H. Watson, formerly superintendent of Park Yarn Mills, Kings Mountain, N. C., has joined Kluttz Rings Inc., Gastonia, N. C., as representative for North Carolina, South Carolina and Virginia.

Frank X. Magarahan, assistant manager of the Appleton Plant, Anderson, S. C., of J. P. Stevens & Co., has retired. Magarahan was employed by Appleton Co. in 1927 as chief accountant. He was promoted to assistant treasurer in 1946 and was made assistant manager in December 1950, when the plant was acquired by J. P. Stevens & Co. Robert L. Hale, formerly assistant

manager of the plant, succeeds Magarahan. Hale is a graduate of Texas Tech with a degree in textile engineering. He was employed by the Stevens' Seneca Plant of Utica-Mohawk in 1952. He came to the Appleton Plant in 1955 as general overseer of planning and was promoted to the position of office manager in 1958.

Dewey Davis has been promoted from loomfixer to second hand on the third shift at the Durst Plant of Greenwood (S. C.) Mills.

T. B. Baldridge Jr.

T. Bayard Baldridge Jr. has joined the staff of U. S. Textile Machine Co., yarn processing equipment manufacturer of Scranton, Pa., in the capacity of sales engineer for Northeastern U. S. A textile engineering graduate of Philadelphia Textile Institute, Baldridge was in charge of the throwing machine division at Fletcher Works Inc., Philadelphia, for several years and, more recently, served as a sales and development engineer in the special machinery field with the Rodman H. Martin Co., Norristown, Pa. . . . William P. Russell of Atlanta, Ga., is representing U. S. Textile Machine in the states of Florida, Mississippi, Georgia, Alabama and Tennessee. Russell has been identified with textile mill supplies and machinery in the South since 1933.

Charles B. Taylor has been named purchasing agent for Exposition Cotton Mills, Atlanta, Ga., succeeding F. H. Netherland who has retired. . . . Marcus Carter has been named assistant superintendent of Exposition succeeding G. D. Malone.

Richard Thurmond Chatham Jr. has been named executive vice-president of Chatham Mfg. Co., Elkin, N. C. He will be next in command to his brother Hugh G. Chatham, president. The company was founded by his father, Thurmond Chatham.

Hayden C. Cobb Jr.

Hayden C. Cobb Jr. has been named sales manager for Metlon Corp.'s metallic yarns in the states of North Carolina, South Carolina and Virginia. Cobb's headquarters will be at 121 North Main Street, Mooresville, N. C. He has been a Metlon representative for the three states since 1956. Prior to that, he was with Mooresville Mills.

Dr. Jesse Werner, formerly director of commercial development for the dyestuff and chemical division of General Aniline & Film Corp., New York City, has been elected a vice-president of the firm. Dr. Werner, who is the author or co-author of some 45 publications and patents on various phases of organic chemistry and chemical engineering, became associated with General Aniline in 1938 as a research chemist. In 1950 he became assistant manager of process development in the dyestuff and chemical division. Dr. Werner was named technical assistant to the vice-president in charge of operations of the division in 1951 and became director of commercial development in 1952.

Norman Dawson, who has been plant manager at James Lees & Sons' new Fontana Mills Division, Robbinsville, N. C., has been named plant manager at Rabun Mills, Rabun Gap, Ga., Lees modern tufting mill. He will be succeeded at Robbinsville's Fontana plant by Charles Lyle, superintendent of the company's Axminster mill at Glasgow, Va. Lyle will be succeeded at Glasgow by Samuel R. Mays.

Dr. E. I. Stearns has been named technical manager of American Cyanamid Co.'s dyes department. A veteran of 25 years with Cyanamid, Dr. Stearns joined the company in 1933 as a trainee at the Bound Brook, N. J., plant. He held numerous positions in the plant and its research department until 1944 when he was named chief physicist. He joined the dyes department in 1952 and has served as Chicago branch manager since 1956. He is a member of the American Association of Textile Chemists & Colorists and of the American Chemical Society.

William B. Guerrant

William B. Guerrant has been named district sales manager for textile fibers sales at The Dow Chemical Co.'s new fibers sales center in Charlotte, N. C. Guerrant is a chemistry graduate of the University of Virginia. He joined Dow in 1950 after working in the research and development laboratories of Dan River Mills, Danville, Va.

Charles B. Putman, treasurer of the B. F. Goodrich Textile Products Division at Thomaston, Ga., since 1953, has been appointed manager of costs and inter-plant accounting for the B. F. Goodrich Co., with headquarters in Akron, Ohio. Putman joined Goodrich in 1928 and in 1943 was appointed accounting manager of the company's new plant in Tuscaloosa, Ala. He became accounting manager of the Los Angeles plant in 1951.

Joseph A. Zeller has been appointed to head new business development for the factoring division of James Talcott Inc., 105-year-old commercial financing and factoring organization. He will be associated with Edward J. Fitzgerald, vice-president in charge of new business development for the company. Zeller joined Talcott's new business department in 1955. Previous to that he was credit manager and a director of Brand & Oppenheimer for a period of ten years. Most of his business career has been as a credit executive in the textile field.

George Asnip has been elected treasurer of Laurens (S. C.) Mills. Asnip is also vice-president of Excelsior Mills, worsted division, and treasurer of Abbeville Mills Corp.

OBITUARIES

Robert L. Bradley, textile manufacturing executive of Lenoir, N. C., died February 9. Mr. Bradley had served in an official capacity for the Hayes Cotton Mills Co., Hudson Cotton Mfg. Co., Moore Cotton Mill Co. and Caldwell Cotton Mill Co. Surviving are his wife, two daughters and a son.

Jack Frye, 54, former president and board chairman of the General Aniline & Film Corp., New York City, was killed in an automobile accident in Tucson, Ariz., on February 4. Mr. Frye joined General Aniline in 1947 as president and board chairman and served until 1955 when he resigned. He was also one of the founders of Trans World Airlines.

P. B. Mitchell, 77, Joanna Cotton Mills executive, died at his office last month after a 66-year career in the textile industry. Mr. Mitchell had served Joanna for 33 years. From 1926 until 1946 he was general superintendent of the mill. He retired in 1946 but was recalled to duty as the assistant to the vice-president and general manager in 1948. Survivors include his widow and three sisters.

William F. Regnery, 54, president of Joanna Western Mills Co., Chicago, Ill., and Joanna (S. C.) Cotton Mills Co., died early this month. Mr. Regnery had been named president of the two mills after the death of his father, one of the founders. He operated out of Chicago, leaving the Southern operation in the hands of his brother, Walter Regnery, vice-president. Survivors include his widow, four sons, a daughter and three brothers.

MILL NEWS

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

ATLANTA, GA. — Fulton Cotton Mills here has reported income of $32,690 before federal income taxes for 1958. Operations of the cotton mills and finishing plant resulted in a profit of $752,000 before taxes. Non-recurring expenses in operation of bag plants and in final disposition of bag manufacturing facilities during the year absorbed the major portion of the earnings of the textile division. The company's long range program to discontinue its unprofitable bag operations has been effectively carried out. As a result of the sale of the bag plants a substantial amount of cash funds accumulated. Some 239,972 shares of the capital stock were redeemed at $30 per share and retired, and the stockholders received $7,199,160.

NEW YORK, N. Y.—For the fiscal year ended November 29, 1958, Indian Head Mills with headquarters here showed a net profit, after all charges, of $2,331,383 on sales of $43,174,992, compared with 1957 net profit of $1,911,997 on sales of $22,498,567. After preferred stock dividends of $514,036 paid in 1958, there remained a net profit of $7.86 per share on the 231,100 shares of common stock outstanding at the year end.

GREENSBORO, N. C.—Burlington Industries here has reported that sales in the current quarter are running approximately 10% ahead of the similar second quarter in 1958 and, since earnings this year will not be affected by anything like the severe break in wool markets which took place during this time last year, an improvement in earnings for the first six months is expected. The company's first quarter results, as given in the report, showed consolidated net sales of $182,943,000 and net operating earnings of $4,248,000 or 46 cents a share, as compared to sales of $170,284,000 and earnings of $4,107,000 or 44 cents a share, for the comparable quarter last year. Spencer Love, president, told stockholders that highly competitive conditions which exist in the textile industry and other basic problems, "not the least of which is that of foreign imports," have made it difficult in recent years for stockholders to receive an adequate return on investment. He described the current industry position as showing a "slightly improving trend" but pointed out that the current picture is "clouded by the wage situation and by a probable decline in raw cotton prices before the close of our 1959 fiscal year."

NEW YORK, N. Y. — An agreement to purchase The Linen Thread Co. by Indian Heads Mills was announced in New York recently by James E. Robison, president of Indian Head, and in London by W. E. Luke, managing director of The Linen Thread Co. Ltd., Glasgow, Scotland. The purchase was for cash and notes, and the transaction involved about $12 million. The Linen Thread Co., a wholly-owned subsidiary of Linen Thread Co. Ltd., has operated mills in the U. S. for over 100 years, manufacturing threads, yarns, twines, sports nets and fish netting. Principal plants are located in Paterson and Kearny, N. J., and Blue Mountain, Ala. Robison said that the company will be operated as a wholly-owned subsidiary of Indian Head. H. E. Kegelman will continue as president of The Linen Thread Co. The sale is subject to the approval of the British Treasury.

UNION, S. C.—Monarch Mills has reported a net profit of $496,071 for the fiscal year ended November 30, 1958. This compares with a net of $492,690 for fiscal 1957. Sales figures were not given.

GREENVILLE, S. C.—Cone Mills Corp., Greensboro, N. C., is erecting a new building on Buncombe Road here, across from Union Bleachery. It will house two units, an I.B.M. tabulating machine unit to service the finishing division and a clerical unit to service Cone sales and customers. Some 30 to 40 people will be employed in this new operation.

CHICAGO, ILL.—Chicopee Mills has moved into a modern new 1,600-square-foot showroom in The Merchandise Mart here. The firm is occupying Space 977 in the center of the children's apparel industry. Although the children's line is being featured, the firm's general line of cotton goods and the nonwoven fabrics also will be displayed in its new showroom. Richard Schneider and Frank Leach, central division sales managers, will headquarter at The Merchandise Mart, as well as other company representatives in this area.

BOSTON, MASS.—The Kendall Co. here showed net earnings of $3,805,000 on sales of $103,382,000 for 1958, as compared with earnings of $4,005,000 on sales of $106,822,000 in 1957. Earnings per common share in 1958 were $3.68 as compared with $3.80 in 1957. The 1958 figures are unaudited.

LEXINGTON, N. C.—An estimated $18,000 in damage was done to the payroll office of Erlanger Mills here by a recent fire. The blaze started in an air-conditioning unit located in the basement of the payroll office.

NEW YORK, N. Y.—Riegel Textile Corp. here and subsidiaries has reported a net income of $265,435 or 25 cents a share on sales of $26,648,388 for the 16 weeks ended January 17. This compares with a net income of $169,955 on sales of $23,966,715 in the comparable period in 1957.

PACOLET, S. C.—Pacolet Mfg. Co. here has reported a net profit of $291,111 or $2.91 a share for the fiscal year ended November 30. This compares with net profit of $877,920 or $8.53 in the previous fiscal year. Sales figures are not disclosed. At November 30, total current assets were $18,797,067 against $18,883,781 at December 1, 1957. Total current liabilities were $1,637,223, compared with $2,699,207 for the fiscal year 1957.

GREENSBORO, N. C.—Pacific Mills, member of Burlington Industries here, has reported declines in profits and sales in the first quarter of the current fiscal year. Earnings for the first quarter, which ended December 27, were $178,000 or 19 cents a share as compared with $393,000 or 41 cents a share in the comparable period in 1957. Sales for the first quarter totalled $20,383,000 against $21,520,000 in the first quarter of the previous fiscal year.

DURHAM, N. C.—Erwin Mills here has reported net profit of $139,781 or 13 cents a share on earnings of $15,729,502 for the three months ended December 31. This compares with a net profit of $198,432 on sales of $12,342,228 for the comparable period in 1957. Income taxes totalled $164,091 against $242,000 in the same period in 1957.

GRANITEVILLE, S. C.—The Graniteville Co. here reports net earnings of $895,076 or $2.24 a common share on sales of $52,732,358 for the year ended December 28. This compares with earnings of $1,232,164 or $3.08 per common share on sales of $55,566,731 in 1957. On January 3, total current assets were $14,002,957 against $12,963,484 on December 28, 1957.

NEW YORK, N. Y.—United Merchants & Manufacturers Inc. here recorded a 40% increase in sales in the first half of the present fiscal year as compared with the first half of the 1957 fiscal year. Estimated consolidated net earnings for the six months ended December 31 were $7,520,000 or $1.26 a share. Earnings for the period totalled $4,430,000. This compares with net earnings of $5,342,000 or 90 cents a share and earnings of $3,265,000 in the first half of the previous fiscal year.

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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, $1.50; two years payable in advance, $2.00; one year, Canada, $3.00; one year, other countries in Postal Union, $5.00; single copies, 25 cents. ¶ A companion monthly journal, THE KNITTER, is published by Clark Publishing Co. and devoted to the interests of the knitgoods manufacturing industry.

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A Busy Month

THE shape of things to come for the textile industry will very definitely be influenced by three developments that came hard on the heels of one another in the past 30 days. Coming first like a whirlwind in a weave room alley was the report that Cannon Mills was upping its basic wage rates. Next came the report from Washington of the Pastore Subcommittee's recommendation to the Senate's Committee on Interstate and Foreign Commerce. Less than a week later followed the Federal Trade Commission's proposed list of 45 rules it will use in administering and enforcing the new Textile Fiber Products Identification Act.

Nobody knows what the ultimate effect of any of these developments will be, and comments on each have ranged from one extreme to another. Provoking the most immediate reaction was Cannon's move to boost wages. Only a few weeks ago, during the first week of December, the prevailing philosophy held that now was not the time to hope for an increase in worker's pay. The second half upturn in volume production still had not offset the losses of the first six months of the year. Profits were lagging. Prices were unsettled. Scarcely any mill men took exception to Spencer Love of Burlington Industries' widely heralded analysis that while a general, voluntary, industry-wide increase in wages was desirable, it just wasn't feasible.

The only way wages could be boosted, Mr. Love pointed out, was by increasing the Federal minimum wage to $1.25 an hour. That would put every mill in the same boat; nobody could avoid this kind of increase. If any mill voluntarily boosted its basic wage rates at this time, he noted, they would merely be booting themselves out of line in competitive costs. Generally speaking, industry heads nodded in agreement.

Then, less than two months later, along comes Cannon Mills with its increase. Why? What prompted it? Some say it's Charles A. Cannon's way of fending off union activity at his plants. The Textile Workers Union of America will assure you it was the result of its efforts and its distribution of thousands of pamphlets calling for a general wage increase. Others say that Mr. Cannon is laying another claim to his title of "rugged individualist."

At this writing, Burlington has not found justification for joining those mills which went along with Cannon on the increase. On the contrary, Mr. Love on February 2 described the move touched off by Cannon as "both premature and precipitate because of the continued low operating margins under which we work, because of obvious uncertainty with regard to the extent of the recovery trend in the industry and because of the seasonal aspects in that our Spring 1959 prices are all set."

J. P. Stevens & Co. also announced on February 2, the day Mr. Love voiced the above comments, that it was carefully considering reports on wage increases made by a few textile companies, and that, "It does not now appear clear that these advances will become general throughout the industry at this time." A week later Stevens announced that while "thus far no detailed pattern of advance appears clearly discernible . . . a wage increase . . . is in the making and, thus, Stevens will adjust rates upwards." The move was partially inspired, it was pointed out, by the report of the Pastore Subcommittee which led Stevens "to believe that something affirmative will be done to arrest the decline of U.S. textile manufacturing in recent years."

One thing certain about the increases is that the industry will have to be more concerned with costs than ever before. Just how some mills, now operating as non-profit organizations, can finance the wage increases is not known. An already cautious market has become more so, and the extent of price adjustments can't even be guessed at for the time being.

As evidenced by Stevens' reference to it in announcing its wage hike, the report of the Pastore Textile Subcommittee is being viewed with considerable hope. Reviewed elsewhere in this issue (Page 51), the report listed ten

recommendations the subcommittee has made to the Senate Committee on Interstate and Foreign Commerce. Three of the recommendations merit the most encouragement. The first calls for the establishment of quotas by specific categories; the second for the elimination of the two-price system on cotton; the third for more realistic depreciation rates on textile machinery.

Whatever the chances might be of these changes being made in government policy, the fact remains that much pressure will have to be brought on officials in Washington if they are to be genuinely considered at all. It would be foolish to consider that the jury is now out and that all possible arguments have been made. It will still take a tremendous amount of work to convince a lot of people who will have to be convinced before the Pastore Subcommittee recommendations amount to anything more than they now are. The industry owes it to all those who participated in the hearings conducted by the subcommittee to throw as much weight as possible behind these recommendations. Their adoption could do much to lead the industry back onto the road to recovery.

The Federal Trade Commission's issuance on February 9 of a set of 45 proposed rules for applying the Textile Fiber Products Identification Act will be followed March 10 with a public hearing in Washington. Some modification is being urged on several of the rules, but most quarters seem to agree that this can be worked out between now and March 3, 1960, when the act goes into effect.

One of the more widely discussed requirements of the act concerns the labeling of imported textile products. In its proposed rules, the F.T.C. states that where the form of an imported product is not basically changed, the country where the product was made or processed must be disclosed. On the other hand, if the product is made in the U.S. from imported materials, the country of origin of the materials need not be disclosed. In other words, a shirt or blouse made in Japan would have to be so labeled. A shirt made from fabric imported from Japan would not require a label.

Following the public hearing in Washington next month, the F.T.C. will issue its final rules on June 3. All manufacturers of products falling under the act will have nine months in which to comply with the requirements before they become effective March 3, 1960.

Carolina Yarn Outing May 14-16

Frank P. Barrie, executive secretary of the Carolina Yarn Association, has announced that the group will hold its annual outing at Pinehurst, N. C., Thursday, Friday and Saturday, May 14-16.

T.R.I. Announces Spring Seminars

The Textile Research Institute of Princeton, N. J., has announced its Spring seminar schedule. Following are the dates, speakers and topics: March 5, E. M. Allen of American Cyanamid Co., "Optical Bleaches"; March 19, Prof. R. S. Stein of the University of Massachusetts, "Orientation of Crystalline Polymers"; April 2, F. Fortess of the Celanese Corp. of America, "Dyeing Hydrophobic Fibers"; April 16, J. H. Wakelin of Textile Research Institute, "Low Temperature X-Ray Studies on Polymers"; May 7, R. Chicurel of the institute, "Extension of Elastic Filaments"; and May 21, T. E. Timell of the Pulp & Paper Institute, "Seed Hairs and Bast Fibers."

TEXTILE INDUSTRY SCHEDULE

— 1959 —

Mar. 12-13 (Th-F)—Annual Southern Spring meeting, **TEXTILE ENGINEERING DIVISION, A.S.M.E.**, The Clemson House, Clemson, S. C.

Mar. 19-20 (Th-F)—Spring meeting, **SOUTHERN TEXTILE METHODS AND STANDARDS ASSOCIATION**, Clemson House, Clemson, S. C.

Mar. 19-21 (Th-Sa)—Annual convention, **AMERICAN COTTON MANUFACTURERS INSTITUTE**, Palm Beach Biltmore Hotel, Palm Beach, Fla.

Mar. 26-27 (Th-F)—Spring meeting, **TEXTILE QUALITY CONTROL ASSN.**, North Carolina State College, Raleigh, N. C.

Apr. 2-3 (Th-F)—Annual conference on Electrical Applications in the Textile Industry, Textile Industry Subcommittee, **AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS**, Heart of Atlanta Motel, Atlanta.

Apr. 3 (F)—Spring meeting, **SOUTH CAROLINA DIVISION, SOUTHERN TEXTILE ASSOCIATION**, Fairforest High School, Spartanburg, S. C. (Supper served at 6:30 p. m.; meeting begins 7:30 p. m.)

Apr. 11 (Sa)—Spring meeting, **NORTHERN NORTH CAROLINA-VIRGINIA DIVISION, SOUTHERN TEXTILE ASSOCIATION**, Lexington Senior High School, Lexington, N. C. (10 a. m.)

Apr. 15-16 (W-Th)—Open House, **A.C.M.I. COTTON FIBER TESTING LABORATORY**, The Clemson House, Clemson, S. C.

Apr. 22-25 (W-Sa)—Annual convention, **COTTON MANUFACTURERS ASSOCIATION OF GEORGIA**, Diplomat Hotel and Country Club, Hollywood Beach, Fla.

Apr. 25 (Sa)—Spring meeting, **TEXTILE OPERATING EXECUTIVES OF GEORGIA** (Opening, Picking, Carding & Spinning), Hightower Textile Building, Georgia Tech, Atlanta.

Apr. 25 (Sa)—Spring meeting, **EASTERN CAROLINA DIVISION, SOUTHERN TEXTILE ASSOCIATION**, North Carolina State College School of Textiles, Raleigh, N. C. (10 a. m.)

Apr. 28-29 (Tu-W)—Technical Advisory Committee meeting and Board of Trustee Meeting, **INSTITUTE OF TEXTILE TECHNOLOGY**, Charlottesville, Va.

Apr. 29-30 (W-Th)—Spring meeting, **THE FIBER SOCIETY**, Fontana Village, N. C.

May 2 (Sa)—Spring general meeting, **ALABAMA TEXTILE OPERATING EXECUTIVES** (Slashing and Weaving), Thach Auditorium, Alabama Polytechnic Institute, Auburn, Ala.

May 12-14 (Tu-Th)—**COTTON RESEARCH CLINIC** (sponsored by the National Cotton Council), The Grove Park Inn, Asheville, N. C.

May 14-16 (Th-Sa)—Annual outing, **CAROLINA YARN ASSOCIATION**, Pinehurst, N. C.

May 18-23 (M-Sa)—**NATIONAL COTTON WEEK**, sponsored by the National Cotton Council of America.

June 18-20 (Th-Sa)—51st Annual Convention, **SOUTHERN TEXTILE ASSOCIATION**, The Ocean Forest Hotel, Myrtle Beach, S.C.

Sept. 10-11 (Th-F)—Fall meeting, **THE FIBER SOCIETY**, Textile Research Institute, Princeton, N. J.

Oct. 1-2 (Th-F)—Fall meeting, **TEXTILE QUALITY CONTROL ASSOCIATION**, The Grove Park Inn, Asheville, N. C.

Oct. 3 (Sa)—Fall meeting, **TEXTILE OPERATING EXECUTIVES OF GEORGIA** (Slashing & Weaving), Hightower Textile Building, Georgia Tech, Atlanta.

Oct. 7 (W)—**CHEMICAL FINISHING CONFERENCE**, sponsored by the National Cotton Council, Mayflower Hotel, Washington, D. C.

Oct. 8-10 (Th-Sa)—Annual national convention, **A.A.T.C.C.**, Sheraton Park and Shoreham Hotels, Washington, D. C.

Oct. 10 (Sa)—Fall general meeting, **ALABAMA TEXTILE OPERATING EXECUTIVES** (Carding and Spinning), Langdon Hall, Alabama Polytechnic Institute, Auburn, Ala.

Oct. 17 (Sa)—Annual meeting, **(GEORGIA) TEXTILE EDUCATION FOUNDATION**, A. French Textile School, Georgia Tech, Atlanta.

— 1960 —

Apr. 7-9 (Th-Sa)—Annual meeting, **AMERICAN COTTON MANUFACTURERS INSTITUTE**, Americana Hotel, Bar Harbor, Fla.

June 23-25 (Th-Sa)—52nd annual convention, **SOUTHERN TEXTILE ASSOCIATION**, The Grove Park Inn, Asheville, N. C.

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday

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VOL. 85 FEBRUARY 1959 NO. 2

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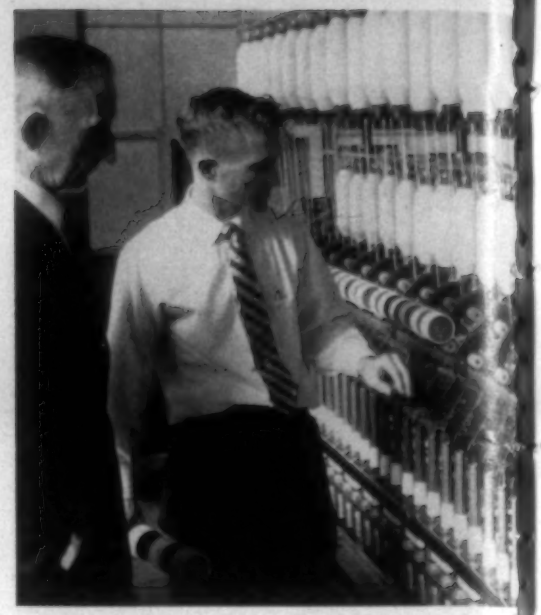

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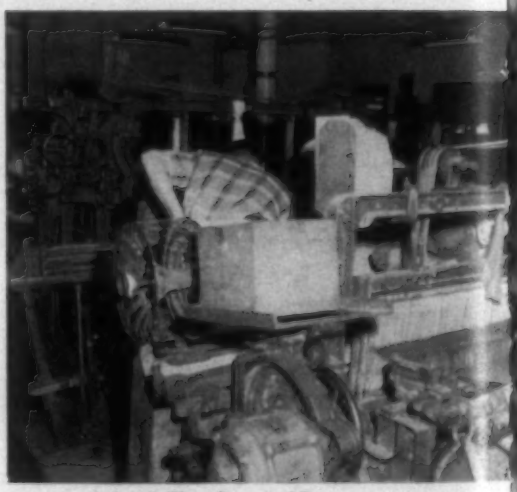

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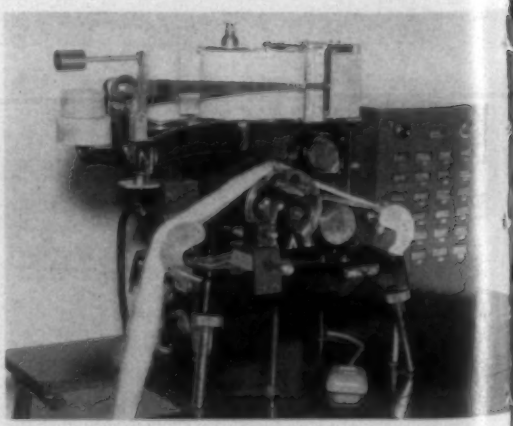

sliver tester, Page 52

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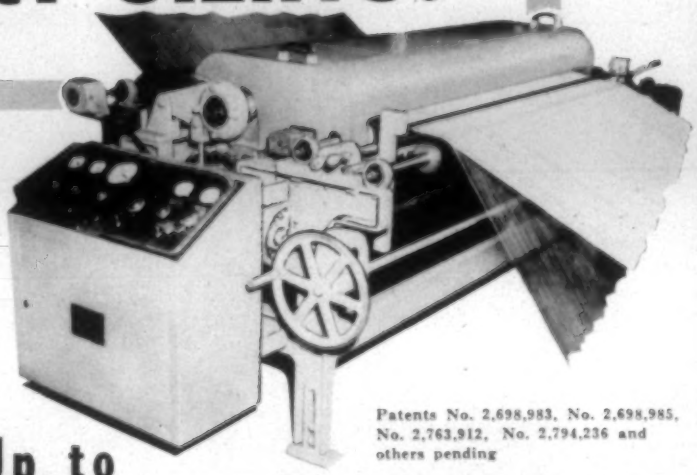

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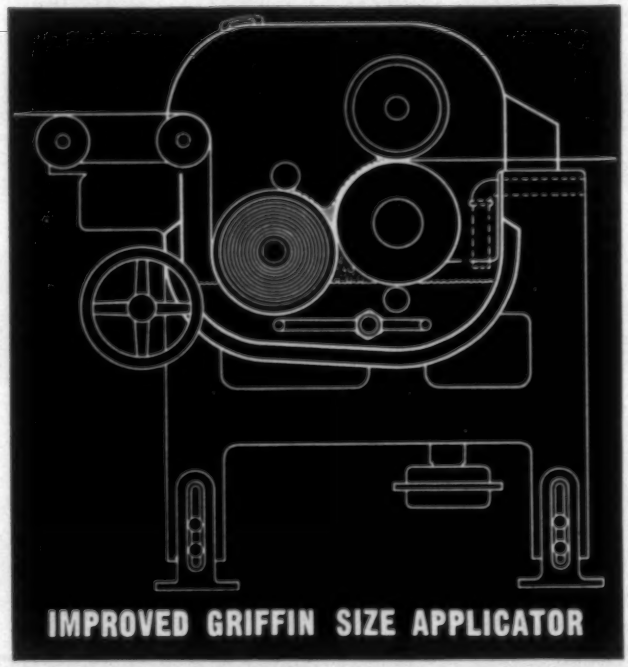

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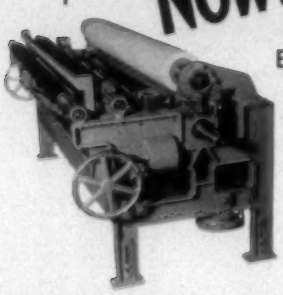

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